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ANNEX

BICYCLING AS A HOBBY

Bicycling As a Hobby

By ROLAND C. GEIST

President of the College Cycle Club;
Former Captain of the Century Road
Club Association; Member of the 1920
U.S.A. Olympic Cycling Committee

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BICYCLING AS A HOBBY

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FIRST EDITION

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Contents

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Preface vii
I. How to Select a Bicycle 1
II. The Parts of a Bicycle and Bicycling Terms 22
III. The Adjustment, Care, and Repair of Your Bicycle 32
IV. What to Wear for Cycling 44
V. How to Ride a Bicycle 49
VI. How to Organize a Cycling Club 56
VII. Where to Ride in the United States 67
VIII. Planning a European Cycle Tour 85
IX. Preparing for Racing 99
X. Planning Cycle Parades, Century Runs, and Carnivals 111
XI. What a Cyclist Should Know About the Law 123
XII. The Rules of Safe Riding 128
XIII. First Aid for Cyclists 133
XIV. Cycling and Camping 137

1.30

XV. The Evolution of the Bicycle 143
Appendix I. Bibliography 151
Appendix II. Formula and Gear Tables for Bicycles 155
Appendix III. Partial List of Bicycle Clubs in the United States 157
Index 161

Preface

According to the United States Bureau of the Census, the year 1936 marks the rebirth of bicycling in this country. Approximately 1,250,000 wheels were produced at a value of $27,500,000. This exceeds the previous high mark of 1899, when 1,182,691 bicycles were produced at a value of $23,656,487. It is estimated that there are 7,000,000 bicycles in the United States today, a ratio of about one bicycle for every seventeen persons, or one bicycle for every four automobiles.

One of the reasons for this astonishing growth may be that there is a desire to revolt against this over-mechanized age. The bicycle affords an economical, speedy, noiseless, and healthful means of travel. It is available to men and women, young and old, weak and strong. The bicycle is also simple to operate, requires little attention, and is easily housed. Some models may be quickly taken apart and easily reassembled. Cycling also provides competitive sport in road, track racing, and long-distance record riding, early morning spins and vacation tours, and economical commercial transportation from hacking to and from work to the three-wheel delivery van. The exercise may be enjoyed alone or in company with a companion or club; at a lazy gait or a swift pace; at night or day; in summer or winter. Cycling has so many sides that it can never lose its allure.

With the renaissance of bicycling came a demand for information regarding choice and care of the wheel, places to ride, proper clothing, clubs, duties and rights of wheelmen, etc. The total lack of up-to-date literature dealing with the bicycle and the cycling movement prompted the publication of this book. It contains suggestions that will be of practical value to the beginner and serve as a reference book for the more experienced rider. Cycling for health and pleasure is the chief purpose of this volume.

It is hoped that the reader will enjoy this splendid pastime as much as the author does, for wheeling days are happy days.

R. C. G.

Riverdale, New York
May 2, 1940

BICYCLING AS A HOBBY

Chapter I

HOW TO SELECT A BICYCLE

The two chief considerations in choosing a bicycle are: the purpose for which the bicycle is required and the price. A good plan might be to rent a bicycle with an option to purchase if suitable. Among the advantages of renting are: (1) no trouble of cleaning or storing the wheel; (2) no necessity of pedaling home late at night through heavy traffic, after an outing on a cycle train or boat; and (3) low rental rates per day. However, the hired bicycles are usually heavy, not in perfect adjustment and lacking special equipment such as toe clips, tourist bag, etc.

If you desire to purchase a bicycle consider the following points in your selection: (1) a new or secondhand bicycle; (2) type of wheel, i.e., track racing, road racing, touring, delivery; (3) serviceability, as a means of transportation or plaything; (4) size and weight; (5) appearance; (6) equipment as to tires, brakes, saddle, etc.; (7) amount of money available for the purchase.

For a child or beginner it is sometimes advisable to buy a low-priced, secondhand wheel for experimental purposes. A youngster enjoys taking a bicycle apart.

The falls of a beginner do not improve a new wheel. A secondhand wheel in first-class condition is often more desirable than a new machine of inferior quality. Much will depend upon the integrity of the dealer or seller of the used bicycle. It is well to request a warranty as to the condition of the machine. You should examine and try out the machine, note if any major repairs, especially on the frame. Try to find out the reason why the bicycle was sold. Generally it is preferable to buy a new bicycle. A youngster who receives a secondhand bicycle for a Christmas or birthday gift will no doubt be disappointed.

Your interests will decide the type of bicycle. Most young folks are interested in racing or touring. If you think that racing appeals to you, start in with road racing. Strength and lightness are the outstanding features of the racing wheels. Some racing men test the quality of the steel by tapping with their finger nails. A clear ring may indicate a thin but tough tubing (thin gauge). Racing wheels weigh from 17 to 25 lbs. Duralumin and other alloys are used in the construction of the lightweight bicycles. A track cycle is lighter than a road racing model. A motor pace bicycle is built with a smaller front wheel and inverted front forks.

For cross-country touring, where gravel and dirt roads are ridden for many miles, a heavier bicycle may be used. The pleasure rider looks to comfort and safety. A 25- to 30-lb. wheel may be used with somewhat heavier equipment. The heavier wheel will run with less jolting on a rough road. If a 30-lb. and a 20-lb. wheel were run at right angles against a four-inch curb, the heavier machine would easily make the jump whereas the lighter wheel would stop short. On hard-surfaced roads the lighter wheel has a decided advantage in that it is easier to push uphill, safer to control, and faster on the level. The heavy wheels still manufactured today are both dangerous and uncomfortable. They are known as "trucks" or "ice wagons."

If you intend to ride a bicycle as one of your major sports and not as a temporary fad, then buy a well-known sturdy make. (Consumers Union for May, 1938, has rated most of the domestic bicycles by manufacturers.) With one or two exceptions, foreign bicycles excel the American makes in point of serviceability. English, French, German, Dutch, Italian, and Belgian bicycles lead the field, much as American automobiles are the world's best buys. It is questionable if Japanese wheels are as good as European makes.

Correct frame size and lightness are important considerations in the purchase of your wheel. A very tall or heavy person should have a cycle made to fit (like a suit). Take your inside leg length from crotch to heel, and deduct 9 inches. For example, if the measure gives you a leg length of 32 inches, deducting 9 leaves 23 inches. Your frame should be a 23-inch frame. The bicycle should fit, i.e., you should not be obliged either to stretch or to cramp your legs in pedaling. A smaller frame is more rigid than a larger size. A child should never be given an adult size wheel. A lightweight wheel of simple design constructed of duralumin or other alloys is even stronger than the heavier, streamlined models. Light wood rims and the absence of gadgets will materially reduce the weight of a bicycle. The present trend is toward lightness.

To enjoy a wheel, you should take pride in its appearance. Bronze, nickel, or aluminum plate gives a distinctive look. The accessories should match the frame. "Steerhorn" handle bars may attract attention on "Main Street" but they are difficult to maneuver through traffic. A name plate lends individuality.

If you intend to ride constantly with a companion, brother, wife, or husband, a tandem is satisfactory. While somewhat heavier and more difficult to handle, it reduces wind resistance, and there is no danger of the less experienced partner being left behind. The front rider is the "steersman" and the back rider is the "pusher." In the lady-back model, the rear top tube is dropped. The cost of a tandem is about twice that of a single wheel. Triplet cycles seating three are rare and difficult to handle. The unicycle, or single wheel, is difficult to ride and is made to order only.

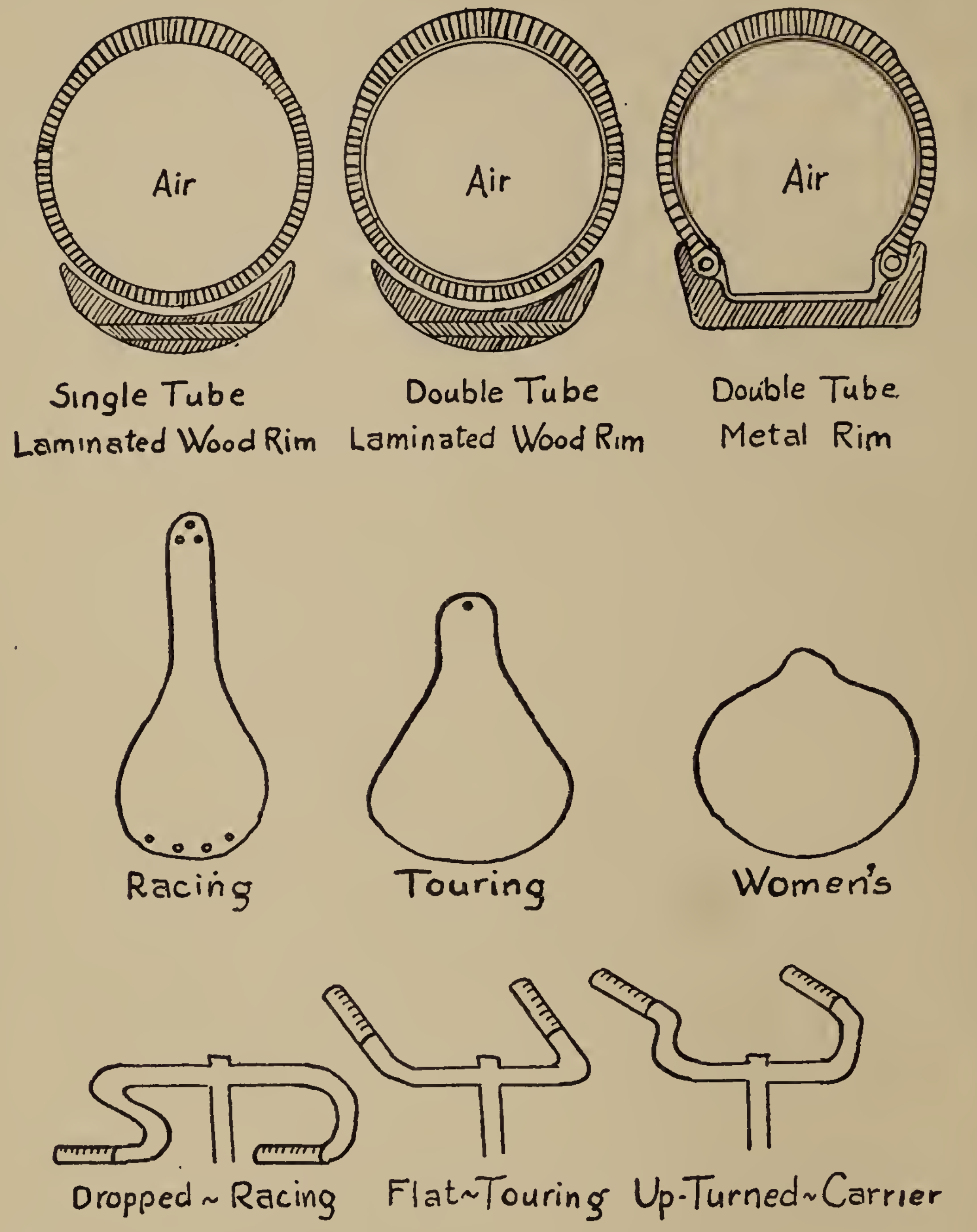
Proper equipment will add to your cycling pleasure. This includes: (1) tires, (2) brakes, (3) saddle, (4) gear, (5) handle bar, (6) pedals, (7) toe clips, (8) wheel guards, (9) pump, (10) lamp, (11) cyclometer, (12) stand, (13) luggage carrier, (14) siren or bell,

(15) reflectors, (16) mirrors, (17) bumpers, (18) chain, (19) tool kit, (20) rims.

Up to about 1890 solid rubber tires were used on most bicycles. The pneumatic tire made the bicycle comfortable. Today you have a choice of either single-tube or double-tube tires. The single tube is the easiest to repair but it may "creep" on the rim and cause a "rim cut." The double-tube tire consists of a thin rubber inner tube, which holds the air, and an outer casing or shoe, which is the wearing part. An extra double-tube tire may be folded compactly and carried as a spare. Most of the foreign racing and touring bicycles are equipped with inner-tube tires. The single-tube tire seems to be most widely used in the United States.

Your next choice will be between low-pressure balloon tires and high-pressure narrow tires. The balloon tire gives a smoother ride, especially over uneven roads, but it has greater rolling resistance and is therefore harder to push. The high-pressure racing tires measure 1 or 1⅛ inch and are light, springy, and fast. For touring the 1½-inch English double tube is preferable. All the narrow tires ride well over hard-surfaced roads. Most experienced wheelmen prefer the narrow, high-pressure tires. Tires manufactured by any of the well-known American and foreign rubber companies give satisfactory service, if used and inflated properly.

Brakes are necessary equipment on every bicycle to be ridden on the highways. In New York State every bicycle must have adequate brakes. Brakes may be



TYPES OF TIRES, SADDLES AND HANDLE BARS

classified as two-wheel and rear-wheel types. The two-wheel brake is the more efficient, when applied slowly and evenly. You may choose a coaster brake, internal hub brake, or hand-operated rim brake. Most of the American bicycles are equipped with the coaster brake, which gives coasting freedom and braking ability operated by back pressure on the pedals. This brake adds to the weight of the bicycle, is difficult to repair, and may get out of order.

The hand-operated internal expanding brake operates on both front and rear hubs. If well made, this type of brake should operate efficiently. According to some experts, this type of brake has been considered a mechanical failure. The hand-operated rim brakes are considered better than the hub types. There are two types of rim brakes: the bar type, which presses a brake shoe against the underside of the rim (usually made of metal); the caliper type, which operates by a wire cable which releases and contracts the brake shoe against the side of the rim (usually made of wood). Many of the lightweight wheels use the caliper type. This gives you the advantage of light weight, ease of repair, and quick adjustment if the wheels are removed. Practically all the foreign bicycles are equipped with rim brakes. Select your type of brake for these qualities: (*a*) efficiency; (*b*) light weight; (*c*) ease of repair; (*d*) readily obtained replacements; (*e*) ease of adjustment. Avoid the brake that is directly applied to the tire.

Comfort is your test in the selection of a saddle. The beginner nearly always complains of his saddle. This may be because you sit in the saddle as if it were a chair. Your weight should also be carried on your pedals. A medium-weight pliable leather saddle is preferable for most riders. Lamb's wool or an air cushion may be placed over the saddle for greater comfort. Springs under the saddle may add to the comfort of the rider but they also add weight and are likely to bend out of shape. Racing saddles are long, narrow, and without springs, the leather itself acting as a spring. For touring a racing type saddle may be used. Women's saddles are usually wider and shorter than men's. Children should ride a small size and heavy persons a larger size. Try out the various types of saddles until you find one to your liking. An English make saddle has been found best by experienced cyclists. Use the lightest saddle in which you can ride comfortably.

The use of the correct gear will increase the pleasure derived from your wheel. According to Clyde, "By the gear of a bicycle is understood that application of chain and sprockets by which the speed of the rear or driving wheel is increased so as to make it the equivalent of a wheel of larger diameter. Thus, to say that a wheel has a 'sixty' gear is to say that the rear wheel is the equivalent of a wheel of sixty inches in diameter, run without gear; that is, each revolution of the sprocket sends the bicycle a distance equal to the circumference of a sixty-inch wheel." A large wheel goes farther at each revolution than a small wheel. By using gears the standard 28-inch wheel may be pedaled at about the same rate as the old high wheels.

Low gears (up to 64) force you to keep your feet in rapid motion to acquire a pleasurable speed (like taking short steps). Low gears are advantageous in going up hills and riding against the wind, and carrying heavy weights. High gears (above 80) save in revolutions but require more exertion to make each revolution. For track and level road riding high gears are useful. Select the gear which you find the easiest on the road. For the average person a gear of about 72 is the best.

Multiple-speed gears are now available in America. Foreign bicycles have been so equipped for years. This device consists of an arrangement of sprockets which may be connected or disconnected by a lever attached to the frame. The speed arrangement may be an internal rear hub mechanism or external operation. A standard English three-speed gear provides a high gear 33 1/3 per cent above normal and a low gear 25 per cent below normal. The two-speed gear gives a low gear 25 per cent reduction from normal. These multiple gears give you a decided advantage in hilly cross-country riding. But they are costly, add weight to the wheel, require adjustment, and are not easily repaired on the road. Changeable gears are gaining in popularity.

If you wish to enjoy fast road riding or racing you will require a "fixed gear," i.e., one not adjustable to other ratios while riding, without a coaster brake, without freewheeling, which is always in gear at the same ratio. This is the lightest, simplest arrangement possible and permits quick interchange of wheels, as required in racing. Sometimes the rear wheel has several sprockets offering a choice (by taking off the chain or reversing the wheel) of gears and/or freewheeling. Freewheeling gives you the opportunity to coast down hills, keeping your pedals at rest. Freewheeling offers less certain control than fixed gearing. The fixed gear permits double pumping action in that you may push down and pull up (with toe clips), thus increasing your power in hill climbing or racing.

You have a wide choice in the selection of handle bars. Control and comfort should be your guide in their purchase. You should not lean your full weight on your wrists, but the handle bar should afford a comfortable hold and easy steering. Some of the excessively wide bars, the motorcycle type, and streamlined shapes are difficult to control and uncomfortable on longer runs. Many experienced riders prefer the adjustable bars that may be fitted to an upright position or dropped. A forward (Taylor) extension bar with adjustable positions forward and backward is most satisfactory. Light duralumin bars are both attractive and strong. For touring pure gum rubber or cork grips are easy on the wrists. Racing men often tape their bars completely, thus giving a firm hold at any grip.

Just any kind of pedal will not do for your bicycle. Most American manufacturers equip their wheels with rubber pedals. Light rubber pedals are comfortable and permit more or less of a firm grip in dry weather. A cheaply constructed pedal (without an extra crossbar) will soon tear apart. The lightest pedals are the all-metal "rat trap" type. For racing and fast road riding they are strong, light, and nonslippery in wetness. Practically all the foreign wheels are equipped with the rat trap type.

One necessary device for safe and sure pedal motion is the little toe clip. It is made of light metal attached to the pedals, the upper part curving slightly over the toe to hold the foot in position. In order to avoid slippage, a short strap is passed around the shoe, through the toe clip, and fastened with automatic (quick release) buckles. Your toe clip prevents slipping the pedal, and gives you the advantage of the upward push for fast riding. No experienced rider should be without a toe clip. A beginner who "spills" frequently should not use the toe clip; the feeling of being "tied to the wheel" may cause some apprehension.

Chain or wheel guards are often found on women's bicycles. They are usually made of tin, wood, or celluloid. Unless you intend to ride in wet weather and on muddy roads they are of little value. As women today ride in shorts or divided skirts, chain guards are unnecessary. The disadvantages are that they (*a*) add weight; (*b*) are cumbersome in transporting the wheel in train or auto; (*c*) must be removed if the wheel is to be changed; (*d*) often get out of shape and begin to rattle; (*e*) lend a heavy appearance to the wheel.

Your next question might be, "Should I carry a pump?" The answer will depend upon the type of tires you are using. European tires require special pumps to fit their odd sizes. You must then carry a light celluloid pump to fit your English, Italian, or German valves. If your wheel is equipped with American tires, the valves will fit any service-station pump. However, if you detest walking even a half mile or so you will carry your own pump for any emergencies. It is unfair to expect to borrow your friends' or leader's pump from time to time.

In New York State a lighted lamp is required of all bicyclists for night riding. The old oil lamp has given way to the modern electric light operated by dry cells. In the purchase of the electric light consider the long life of the battery, powerful beam, and weight of the outfit. A small generator light outfit for attaching to the front wheel has been marketed. This appears to be an economical unit. Do not attempt to hold an electric flashlight in the hand while riding. This makes for inadequate control of the bicycle. Night riding offers great danger to the cyclist, especially on main highways. Avoid night riding if possible except on a cycle path.

If you intend to ride mileage, the cyclometer is a necessity. Road signs may or may not be accurate. The cyclometer is a small register attached to the front wheel to record mileage. The trip cyclometer gives two readings, one for the present run and the other for the total mileage. In purchasing a cyclometer procure an accurate one that registers in miles. The so-called "speedometers" used on children's wheels are more or less useless. The child rider watches the meter instead of the road, tending to cause accidents. Also, many of them are not accurate, and they add weight and encumber the handle bars.

A bicycle stand will add to the life of your wheel. There are two types of stands, one is attached to the cycle and the other is a separate unit. The motorcycle type of stand that is attached to the rear axle is substantial but adds much to the weight of the wheel. And it may rattle after a while. The kick type of stand, also attached to the wheel, is much lighter; it serves as well as the rear axle stand and at a lower cost. In view of the fact that the cycle may be rested against a post or curb, the attached stand is really unnecessary. A separate stand for home or storage use may be made by hooks and ropes attached to the ceiling. Another type of stand consists of two metal inverted V-shaped devices that hold the wheel by the front and rear axles. Stands elevate the tires from the ground, and the weight of the cycle does not rest on soft tires. It is also easier to clean the wheel when supported on stands.

If you intend to do some touring awheel, it is well to examine the various types of luggage carriers. For a more equal distribution of weight it is advisable to carry your luggage over the front wheel. However, most riders carry their luggage over the rear wheel. Your carrier should be strong (attached to axles), light in weight, large enough to carry a reasonable amount of equipment, and waterproof. The Bermuda type of front-wheel baskets are light but lack the expanding quality. The metal rear-wheel carrier on which a small suitcase may be strapped often rattles and interferes somewhat with mounting and dismounting. Panniers may be fastened by a strap over a strong rear carrier. They appear cumbersome and place much weight on the rear wheel. Some riders prefer a large leather case placed in the frame, but this may interfere with the knee action. It appears that the English have devised the most practical luggage carrier in a waterproof bag attached to the back of the saddle and also tied to the seat post. A wide or narrow model may be purchased. This luggage carrier has the advantage of being waterproof, light in weight, silent on rough roads; it has expanding pockets, is low in price, and may be easily removed when the tour is over.

If you ride in New York you must provide yourself with a suitable and adequate horn, bell, or other device to sound a warning of your approach. This is probably more effective than using one's voice. You have your choice of a hand- or electrically-operated device. The hand-operated signals are usually less expensive and more efficient in operation. The bell is the standard cyclists' signal. Sirens scare the pedestrians unnecessarily and, if operated by tire pressure, cause unavoidable wear. The hand horn requires more manipulation than the bell. It seems that club riders prefer a whistle—it is small, economical, and loud. It may be suspended from the neck so as to be readily available.

Front and rear reflectors also are mandatory in New York. Some bicycles come equipped with reflectors. Others provide saddles or pedals with reflectors. Your dealer no doubt has the approved type of reflector as to size, color, etc., for your state.

The rearview mirror is an unnecessary gadget. Your attention should be directed forward at every moment awheel. It adds weight, may break, and clutters up your handle bar.

Bicycle bumpers are undesirable, too. They offer little protection in a real crash from the side or at an angle. The tires themselves act as bumpers. Why add the extra weight?

The chain is important in the efficient running of a bicycle. It transmits the power from the front to the rear sprocket. The chainless wheel has not proved popular, although it had the advantage of being cleaner and less liable to entangle a long skirt or trouser. A standard English chain roller or block model is considered the best by experienced riders. A cheap chain will not last long and is dangerous. If a link breaks you lose control of your wheel. Quality wheels come equipped with quality chains.

A good tool bag is furnished with the machine. It should contain tire repair outfit, wrench, oilcan, screw driver and a chain link, spoke wrench and extra valve. Pack it tightly to avoid rattling and have it strapped firmly to the frame or saddle. It is best not to carry tools in your pockets—they are easily lost or, in case of a fall, may injure you.

Your choice of rims will again depend on the type of riding you expect to do. For racing, the laminated wood rim is still most widely used because of its lightness and strength. However, it will crack and warp if not properly cared for. Metal rims are gaining in popularity for touring. Most of the English wheels are equipped with metal rims. Metal rims usually weigh more than wood but they present a neater appearance.

CHECK LIST FOR PURCHASING A BICYCLE

I. PURPOSE:
    (*a*) Light touring
    (*b*) Service hacking
    (*c*) Commercial carrier
    (*d*) Road racing
    (*e*) Track racing
    (*f*) Stage and circus

II. PRICE:
    (*a*) New—cash on delivery
    (*b*) New—time payment

(*c*) Used—cash on delivery
(*d*) Used—time payment
(*e*) Used—rental with option to purchase

III. TYPE:

(*a*) Single
(*b*) Tandem
 (couples, brothers, etc.)
 (beginners, weak riders)

IV. WEIGHT:

(*a*) Racing models not over 20 lbs.
(*b*) Touring models not over 25 lbs.

V. MANUFACTURERS:

(*a*) European makes—finer workmanship and balance
(*b*) American makes—lower in price and quality (with one or two exceptions)
(*c*) Japanese makes—inferior imitations

VI. FRAME:

Measurement Rule: Take inside leg measurement and deduct nine inches from it

Parents are warned not to buy oversized frames for children

Smaller frames are more rigid than larger ones

Shorter wheelbase makes for easier starting and pushing

Diamond frame is stronger than the new curved streamlined models

Best tubing known as chrome-molybdenum, high manganese, and Reynolds 531

VII. GEAR:

- (*a*) Fixed
  - High for speed and racing
  - Medium for pleasure cycling
  - Low for power on hills and against wind
- (*b*) Variable—hub gear, bracket gear, dérailleur, Villiers

VIII. CHAIN:

Choice
- (*a*) Block
- (*b*) Roller

Choice
- (*c*) Pitch 1 inch—lighter sprockets and chains
- (*d*) Pitch ½ inch—standard

IX. WHEELS:

- (*a*) Alloy rims—light also used for racing
- (*b*) Laminated maple wood, thin, light, and strong
- (*c*) Hubs plain
- (*d*) Hubs flanged

X. BRAKES:

- (*a*) Hub—neat but heavier—coaster incorporated
- (*b*) Rim—lightweight, positive, easy tire removal

XI. HANDLE BARS:

- (*a*) Dropped—racing (Taylor forward extension)
- (*b*) Flat—touring
- (*c*) Upturned—carrier service

XII. TIRES:

- (*a*) Racing—Single or double tube 1 to 1⅛ inch
- (*b*) Touring—Single or double tube 1⅛ to 1½ inch
- (*c*) Service—Single or double tube 1½ to 2 inch

XIII. Saddle:

- (*a*) Racing—narrow, flexible, springy leather
- (*b*) Touring—medium width, metal springs
- (*c*) Christie—women's wide, short saddle with springs

XIV. Pedals:

- (*a*) Rubber—heavy, slippery when wet
- (*b*) Metal—teeth afford sure grip—cycle shoes made with blocks to fit teeth

XV. Tool Kit:

Complete with set of spanners to fit all the nuts to be found on the machine

XVI. Pump:

Lightweight celluloid, wide diameter, double action to fit (or interchangeable) the tire valve on wheel

Note: English, American, and Italian tires are made with different valve sizes

XVII. Color:

- (*a*) Black, which requires little cleaning and polishing
- (*b*) Nickel, cream, etc., which requires much care in cleaning and polishing

XVIII. Hanger:

- (*a*) American—one-piece, with difficult adjustment
- (*b*) European—two-piece, easy cotter pin adjustment

NOTE: An American bicycle manufacturer is now making a two-piece hanger

XIX. MUDGUARDS:
- (*a*) Heavy steel—extra weight and rattle after much use
- (*b*) Celluloid—light and noiseless, often painted white over rear wheel for safer night riding

XX. LIGHTS:
- (*a*) Electric
  - battery type—cheap, light in weight
  - dynamo type—reliable, more expensive
- (*b*) Oil—blows out in wind, messy, dim light
- (*c*) Acetylene—bright light, heavier

XXI. CYCLOMETER:
- (*a*) Single—miles or kilometers for 26- or 28-inch wheels
- (*b*) Trip—shows both total and daily mileage

XXII. CARRIERS:
- (*a*) Bermuda basket on front handle bar—not expansive
- (*b*) Metal carrier attached to rear axle and stay—usually heavy, cumbersome, and rattles after use
- (*c*) English type of kit bag attached to rear of saddle, lightweight, expansive, and smart-looking

XXIII. WARNING SIGNAL:
- (*a*) Bell—popular means of audible warning

  (*b*) Siren—loud and usually works only when front wheel is moving
  (*c*) Horn—lightweight and audible

XXIV. TOE CLIPS:

  (*a*) Star racing—lightweight with strap for firm attachment
  (*b*) Sager wide model—without strap for quick release

XXV. STAND:

  (*a*) Attached to rear—heavy, clumsy, noisy
  (*b*) Kick—lighter and quicker to operate
  (*c*) Metal not attached—nothing to carry around, for use in storage only

XXVI. INSURANCE:

  (*a*) Against theft, offered by the manufacturer
  (*b*) Against injury or damage

Chapter II

THE PARTS OF A BICYCLE AND CYCLING TERMS

HERE is a short list and brief description of the important parts of a bicycle and the terms in general use by the cyclist:

Acetylene Lamps give a bright light and are prepared by adding water to carbide of calcium. The lamp generates its gas as it burns it, the supply being controlled by the amount of water dropped into the carbide.

Adjustment is the tightening or loosening of the parts of a bicycle.

Ankling, or *Ankle Action*, is the almost continuous pressure on the pedals all the time the cranks are revolving.

Backpedaling is the gripping of each pedal just as it comes around to its lowest point. If the bicycle is equipped with a coaster brake, backpedaling will cause a braking action.

Ball Bearings are perfectly round steel balls used in revolving parts to reduce friction. A bearing must be adjusted so that it is not too tight or it will bind.

Brakes are devices to reduce the momentum of the wheel. They may be applied to the tire directly, to the rims, or be incorporated in the hubs.

Century Run is the pushing of a bicycle for 100 miles within a time limit of 12 hours. A double century, or 200 miles, must be completed within 24 hours. These are formal runs usually conducted by recognized clubs with an entry fee and survivors' medals.

Chain is the method of transmitting power from crank to rear wheel.

Chain Line is the distance from the center of the hub of the back wheel to the middle of the nearest tooth on the chain ring (small sprocket) of the back wheel.

Chain Pitch is the distance between the centers of two adjoining rollers. One-inch pitch is customary on racing models, half-inch on others.

Coaster Hubs, or *Coaster Brakes*, are rear-hub mechanisms that permit both coasting and braking, the latter by applying a backward pressure on the pedals.

Cotter Pins are a sort of long bolts of soft iron with a nut at the end, which tighten the cranks by forming a wedge. They are removed by tapping with a hammer.

Cranks are the arms that fit on the ends of the axle. They are usually 6½ or 7 inches in length. Tall persons can use the 7-inch length.

Crank Length is the measurement from center to center of the two holes which receive the crank and pedal spindles respectively.

Cycle Path is a road 5 or 6 feet in width reserved especially for cyclists; in common use about 1890.

Cyclometer is an instrument attached to the front wheel to record mileage. A trip cyclometer indicates both daily and total mileage.

Dead Heat is a race in which two or more competitors come out even and there is no winner.

Diamond Frame is a man's frame with a top strut or crossbar, which is considered the most rigid frame obtainable. On a woman's frame the top bar is dropped, which weakens the frame. The curved type of top bar is not rigid, and this results in loss of power.

Dynamo Lamp utilizes the electricity derived from a generator driven by the front or rear wheel. It requires little attention.

Fixed Wheel is a single geared bicycle without coaster or freewheel and stopped by backpedaling. It is used in road and track racing and permits complete control and efficient use of power.

Forks are the two metal tubes that hold the front wheel. They resemble the prongs of a dinner fork.

Frame Height is the measurement from the center of the hanger to the top of the seat lug, into which the saddle pin fits.

Freewheel is a coasting mechanism without a brake. It may be applied to either single or multiple gear.

Gear is the ratio between pedaling speed and traveling speed. It depends upon the relative size of the toothed sprockets over which the chain runs. Usual gear is 71; in hilly, windy districts, 66; women should ride about 61; and for track racing 91 or over is correct.

Gear, Variable is a device attached outside or within the hub whereby the rider can change gears while pedaling.

Gear Case is a metal covering for the chain, protecting it from dirt and grit. Some gear cases are waterproof and others utilize an oil bath arrangement that greatly increases the life of the chain.

Gear Table is a quick method of computing the gear of a bicycle. This table is given in the appendix.

Handicap is an allowance of time or distance to favor a weaker rival.

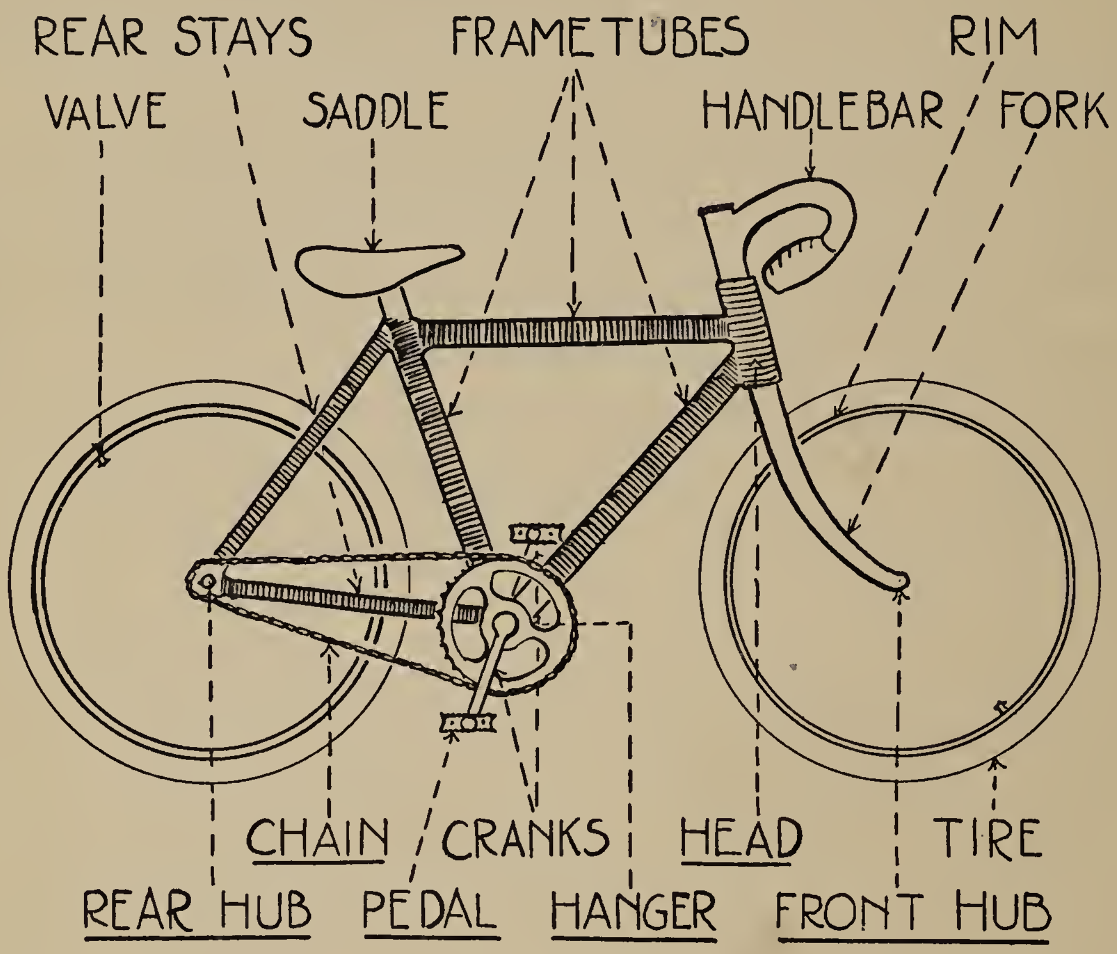
Handle Bar is a wide double curved bar to facilitate steering and balancing of the bicycle. It may be flat, dropped, or upturned.

Handle-Bar Width is the distance straight across from the center of one grip to the center of the other. This measurement should be the approximate width of the rider's shoulders.

Hanger consists of the front sprocket, cotter pins, crank, and axle. The three tubes of the frame meet at this point, and the front part of the transmission is attached.

Head, Steering is the upright forward part of the frame into which the front forks and handle-bar stem are fitted.

Hubs are the spindles and shell about which the



THE PARTS OF A BICYCLE

Those requiring lubrication are underlined wheels revolve. They also carry the wheel spokes, and may contain the brakes or coaster mechanism.

Lamps may be of three kinds: oil, acetylene, electric. The electric type is most popular and may be operated by a dry cell or dynamo.

Lubrication is the oiling or greasing of moving parts. The bearings of a bicycle need lubrication about every 200 miles.

Luggage Carriers should be light alloy skeleton frames attached to the handle bar, rear wheel, or behind the saddle. The English tourist bags or saddlebags (panniers) are popular.

Match Race is usually a competition between two competitors; the one winning two out of three heats is declared the winner.

Miss and Out Race is a race in which the last man over the tape in each lap is called out.

Mudguards are made of steel, aluminum, wood, or celluloid. They partly cover the tire and tend to keep the rider free of mud, water, pebbles, oil, and tar.

Nipples are small caps screwed on the spokes to tighten them to the rim.

Offset is the amount of curve in the blades of the front forks.

Open Race is a competition in which all contestants start from scratch.

Pacing is a situation by which a rider, following closely behind another rider or competitor, has the advantage of lessened wind resistance. The rear rider can also watch the movements of the leader or pacemaker. It is as though the man behind were actually being towed by a rope. This accounts for the disinclination of competitors in a race to assume the lead.

Pedals are the flat metal or metal and rubber parts upon which the foot is placed in order to push the bicycle. They are screwed into the smaller ends of the cranks.

Pedal Width is the measurement between the two end plates, i.e., the space available for the foot.

Pump is the instrument to compress air into the tire. It should be made of celluloid and attached to the frame by spring clips.

Pursuit Race is a race in which the riders are placed equal distances apart. The race begins and as a rider is passed by another he retires from the race until only the winner is left.

Rake is the angle the front forks make with a vertical line. It is usually about 20 or 25 degrees.

Rims carry the tires. They are made of laminated maple wood, duralumin, steel, or alloy.

Rubbing is the hand massage given an athlete's legs usually with alcohol solution to relax the muscles.

Saddle is a seat plus a peak. Racing saddles are extremely narrow, since much of the rider's weight is carried on handle bars and pedals. Most saddles are made of leather with spiral springs for flexibility.

Scratch is a position where a contestant competes against an allowance or handicap.

Shoes are light, without welts. They are reinforced without a heel.

Spanners are flat instruments to fit all nuts found on the bicycle. The spanner fits the nut exactly all around and will not produce the injury that may be caused by an adjustable wrench that grips only two sides and may easily slip and wear the nut circular in shape.

Spokes are thin steel wires threaded through holes in the flange of the hub and drawn up to the rim. There are usually 32 spokes in a front wheel and 40 in a back wheel.

Sprockets are the toothed wheels engaged by the chain to transmit power from the pedals to the back wheel.

Sprinting, or *Jumping*, is the act of accelerating quickly while traveling at a good pace on the road or track. You pull hard on the handle bars and lift the weight of your body from the saddle on to the pedals. The front wheel should not wabble.

Stays are the four thin tubes that support the rear wheel.

Tandem is a bicycle with seats for two persons, one behind the other.

Tires are the rubber-covered air tubes that fit around the wheel and make cycling safe, fast, and comfortable. They may be either single or double tubed.

Toe Clips are curved pieces of metal screwed to the pedals that hold the front of the foot firmly in position.

They are a safety factor in preventing the foot from slipping off or "losing" the pedal.

Trail is the distance between a line drawn through the center of the head of the bicycle and a verticle line drawn from the center of the wheel. This base-line measurement, usually about 2 or 3 inches, is known as the trail. Correct amount of trail makes for flexibility and ease in steering.

Tread is the width between the outer faces of the pedal cranks. A narrow tread is more efficient; it does not spread the feet far apart.

Triplet is a bicycle accommodating three riders, geared high, used for pacing.

Tubes are the hollow circular metal pieces that make up the frame. The better bicycles are constructed of tubing known as Reynolds 531, chrome-molybdenum, and high manganese alloy steels.

Unicycle is a vehicle with one wheel used for trick riding.

Valves are the metal parts of the tire that permit air to pass one way only, i.e., into the tire or tube.

Velocar is a new type of bicycle, which is propelled by the rider lying in an almost horizontal position. It will lessen the wind resistance and bring the back as well as the leg muscles into action. Tests have proved it much faster than the orthodox bicycle.

Wheel Base is the measurement between the two points where the front and back wheels make contact with the ground. Short wheel-base bicycles are easier in starting and in pushing uphill.

Wheel Size is measured by the diameter with the tire fitted and inflated; 26 inches is the usual size.

Workout is a fast training run in preparation for a race. A lower gear, heavier wheel and wider tires may be used.

Chapter III

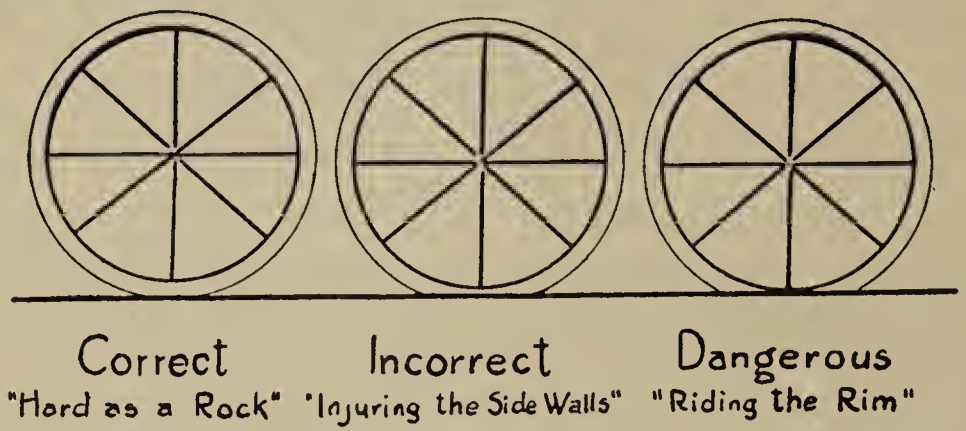
THE ADJUSTMENT, CARE, AND REPAIR OF YOUR BICYCLE

A NEW bicycle will run a long time even if you neglect it. However, pedaling will be more pleasurable and the appearance smarter if you polish, clean, adjust, and lubricate the bicycle from time to time, i.e., after a tour, after exposure to the elements, and at the change of the seasons. If you cannot or will not spend much time in caring for the appearance of your machine, buy a model enameled all-black, with as little plating as possible. If you have purchased a secondhand wheel, the seller should have been required to clean and adjust it and replace worn parts.

Your first adjustment problem will be to set the saddle and handle bars to your desired position. The bars may slide up and forward and are adjusted by an easily noticed nut or bolt. Select the position that is most comfortable for holding and steering. Your full weight should not rest on your wrists. The saddle also will slide up and forward. The saddle height is correct when you are able to follow the pedals around with your heels in comfort, without stretch or cramp. The saddle itself may usually be adjusted by tightening the tension nut, situated underneath at the front.

Much of the efficient running of a bicycle depends upon a well-adjusted chain. A slack chain may jerk off and throw you, whereas an excessively tight chain causes rapid wear. When a cracking noise begins in your chain it is a sign of wear and possibly of insufficient lubrication. If the chain fits tightly over some cogs and loosely over others (stretch), a new chain is necessary and adjustment will be of slight help. The chain adjustment is made by pulling out or pushing in the back wheel. Some cycles have an eccentric disk arrangement for adjusting the chain. Tandem chains are adjusted in this manner. A chain is correctly adjusted when the mid-portion has an up-and-down movement of not more than one inch. The chain should be adjusted till it is just short of being tight—it should always be allowed to retain a little slack, in order that it may run freely and be perfectly free from binding. The chain itself may be altered by taking out a link (most cycle dealers stock half links).

The bearings should be adjusted at least twice a year. Bearings are provided at the wheel hubs, hanger, steering head, pedals, and at the variable gears and freewheels. The correct bearing adjustment is revolving freedom with slight side play. The front wheel should spin freely and gradually come to a standstill. If the bearing is too tight, the wheel will stop suddenly as soon as the momentum ceases. Most wheel bearings are cone-adjusting. Adjust by first loosening the nut, thus freeing the cone. Then use a thin spanner (one-piece wrench that was supplied with the wheel), which



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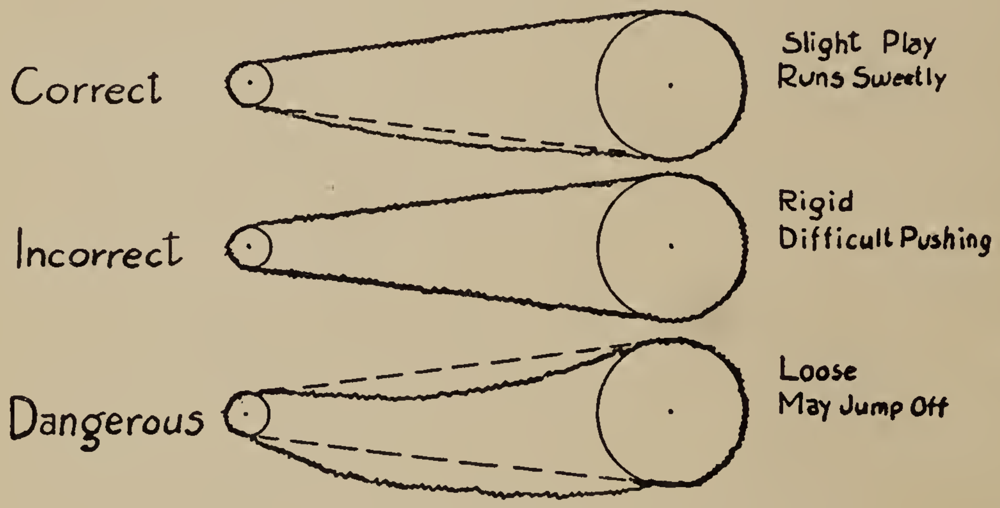

HOW TO ADJUST THE CHAIN

should fit onto one of the "flats." The cone can then be tightened or loosened as necessary. Then tighten the locking nut.

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Rim brakes require adjustment. The composition blocks wear down and may require moving inward to contact the wheel. The wire cable may become frayed and should be replaced by a new cable, rather than tightened. The lining of the expanding hub brake requires replacing after constant use.

Spokes also require tightening from time to time. Spokes should be taut, thus making for a true wheel (straight). A special spoke tool, called a nipple wrench, is used to tighten the spokes. Tighten from the rim end by inserting the wrench to fit the flat part of the spoke nipple, and turn slowly. The tension should be about the same around the wheel.

Before leaving for a tour it is well to examine all wing nuts, bolts, screws, and the screw or snap chain link to make sure they are tight.

Your bicycle, like your watch, requires careful maintenance. Its regular cleaning, lubrication, storage, and care will add much to its efficiency and your riding pleasure.

The frame and polished metal parts should be rubbed with a soft cloth. A little metal cleaner will keep it looking spick and span. Kerosene will take off tar, grease, and oil stains. The spokes may be rubbed with an oiled rag. The tires should be rubbed free of any oil, small particles of glass, gravel, and so on.

If your chain becomes clogged with a mixture of thick grease and mud, clean it by soaking for a day or so in a can of kerosene. Shake the can so that the grit is washed out, and hang up the chain by the ends to let the kerosene drip out. Then wipe the chain dry and give it a bath in a light lubricating oil. Remove and work each part until it moves freely. Wipe it dry and replace on your wheel. How often you should clean your chain depends upon how much you use your bicycle, and whether you ride through rain and snow. One or two cleanings a year should suffice.

Unless you are a skilled mechanic it is well not to take apart a coaster brake or hub gears and brakes for cleaning. Let your bicycle repairman do the job. Clean your bearings by loosening the cones and injecting kerosene or gasoline freely. Revolve the part you are cleaning while dousing with kerosene. After the bearing appears clean, tighten and oil through the oil cup.

Lubricate your chain with oil on the inside and stick graphite on the outside. Other places requiring frequent lubrication are the two hubs and the crank hanger. Less frequent lubrication is required at the steering head, brake joints, and pedal spindles. The coaster hub should be packed with motor grease once every three months. For the other places use a thin lubricating oil. Do not lubricate the cyclometer or the electric light unless the manufacturer of the accessory so advises. The general rule for lubricating should be "little and often."

Your bicycle should be stored in a dampproof, cool place. Dampness injures the metal, leather, and wood rim; heat injures the rubber tires. Do not stand your cycle on deflated tires for any length of time. The weight, pressing continually on the side walls, will crack them. Use a support for the wheel, either iron stands made for this purpose or a couple of hooks on the roof with two slings of rope. If there be danger of thievery it is well to chain your bicycle to a metal post or other immovable object.

Never ride your cycle off or on curbs, nor let it collide with any obstruction. Every shock of this kind may throw it out of line and seriously affect its easy running. Tires should be pumped so hard that your thumb can make little impression on them. Many riders run on underinflated tires, thus injuring the side walls, increasing the risk of picking up nails and sharp stones, and losing riding ease and speed. Ask your dealer for the correct inflation for your type of tire. Examine your tires often for minute foreign objects that stick to the tread and eventually force themselves through to the tubes. The leather saddle should be oiled (neat's-foot oil) on the underside about once a season, to keep it pliable. A careful rider listens for noises when the wheel is running; they indicate wear, friction, and poor adjustment. If you have just come into the possession of an expensive new bicycle you will want to avoid scratching or denting the frame and fittings. Exercise great care in resting your machine against iron fences, other wheels, or curbs, and in baggage cars and shipholds. Tape or rubber will afford some protection to your new frame and plated parts.

Major bicycle repairs should be made by a skilled cycle mechanic. The average amateur cyclist has insufficient equipment and skill to make a satisfactory repair. If your wheel is badly bent out of shape it is best to purchase a new one. If the frame has not been damaged, new wheels and other parts may be fitted to produce a satisfactory job.

Tire, chain, and spoke repairs are often satisfactorily made en route. A flat tire is usually caused by either a puncture or a leaking valve. You should always carry either a full tire repair outfit, an extra inner tube or a complete new lightweight tubular tire (easily folded to fit the tourist bag or slung over the shoulders). The steps in repairing a double-tube, wired-on tire are:

1. Find cause of leak by looking over casing for a nail, glass, etc. If not visible, pass the half-inflated tire through water. Bubbles will definitely indicate position of puncture. Mark it.

2. Unwind valve, see that the tire is flat, but do not take the casing off completely; pry open one of the sides and get out the inner tube.

3. Deflate the tube and select a patch to cover the size of the hole. Spread a thin layer of rubber solution on the face of the patch. Rub around the hole in the tube with sandpaper and spread rubber solution over the part that has been rubbed.

4. Wait a few minutes, until almost dry; then carefully place the patch over the puncture and press it into position. Replace the tube in the casing.

5. If the casing or cover has also been punctured, use a patch of canvas that is flat and free from creases. Cover with rubber solution.

If the trouble was due to a leaky valve, as indicated by the water test, then it must be removed, examined, and possibly replaced. Usually the valve stem (inside) is found to be defective. A new valve stem must be inserted. Usually the rubber tubing or spring on the stem has become worn or damaged.

In the tubular racing type of narrow tire the casing is a complete cylinder with an inner tube sewed within. Both tire and rim are light. A puncture is found and repaired in the same manner as in the double-tube, wired-on tire, except that a sewing job must be done in addition. This is a difficult job to do on the road. However, as the tire is so light in weight, an extra tire is easily carried, folded under the saddle or in a large tool bag. If a puncture occurs, the old tire is ripped off and the new tire is cemented on in a few minutes. The punctured tire can be repaired at leisure.

The single-tube tire is the easiest to repair. The usual tests are made for puncture or valve defect. Then rubber bands and rubber solution are forced into the tire. If the hole is large a brass plug is inserted sideways, then partly pulled out and filed off. However, the brass plug tends to work loose and requires an ever larger plug to cover the hole. In Europe the double-tube tire is favored, whereas in the United States the single-tube tire is still used extensively, probably owing to its lower price.

The life of an average exposed cycle chain is about 5,000 miles. Where the chain is encased in a metal cover and bathed in oil, it may last over 30,000 miles. Wear is indicated by stretch caused by grit working in at each joint. When the chain is loose in its contact with the sprockets it should be renewed. It is not customary to carry an extra chain while touring, but a few repair links and a chain rivet extractor may be carried. The sprocket teeth also may wear out, thus necessitating a new one. This condition may be noted from the tooth profile, which appears like a hook instead of the regular cog and prevents the smooth meshing of chain link and cog.

On a long tour it might be well to take along a few extra spokes. Spokes sometimes loosen and break en route. Broken spokes may result from a severe shock to the wheel or from improper spoking. In order to replace a broken spoke, first unscrew the old one. Then deflate the tire and remove section from rim where new spoke is to be placed. Hook the new spoke through a hole in the flange of the hub. The end will be inserted through a hole in the rim and held there by a nipple (similar to a screw nut) which is screwed down and bedded into the rim. A nipple wrench is used to tighten the spoke.

POINTS ON THE CARE OF YOUR BICYCLE

1. Never ride your wheel over curbs, steps or obstructions.
2. House your wheel in a dry, cool place.
3. When not in use keep the bicycle on a stand or suspended by slings of rope attached to the ceiling.
4. Lubricate bearings (hubs, hanger, pedal, steering head, brake, etc.) "little and often" (150-200 miles of running) with thin oil.
5. Lubricate the chain using thin oil for the inside and graphite for the outside.
6. Clean the enameled and plated parts with a soft oily cheesecloth.
7. Test the brakes and adjust tightly to grip.
8. Test the nuts, tighten bearings, and examine saddle and handle bar for absolute rigidity.
9. Make sure that your battery or generator is working efficiently.
10. Keep your chain at tension, quite tight but with some play.
11. Examine wheels and note if running true or not.
12. Keep your tires inflated at proper pressure as advised by your dealer.
13. Keep your tires away from oil, as oil tends to soften rubber.
14. Unless you are an expert mechanic, do not take your coaster brake or hub gear mechanism apart; let your dealer adjust and repair it.

15. Clean your chain in bath of kerosene, remove, give an oil bath, test links for pliability, and replace chain.
16. Clean bearings by flooding with kerosene after loosening.
17. Use a fixed spanner (intended for one size of nut only) for a secure hold, rather than the two-sided wrench.
18. Brake fittings, bell, pump clips, and gear levers should be greased.
19. Oil your leather saddle once a season on the underside to keep it pliable.
20. Examine the treads of your tires for tiny pieces of glass, sharp pieces of gravel, oil, tar, or tacks.
21. Noises when running indicate wear, friction, and poor adjustment.

CYCLE OPERATION TABLE

Correct Adjustment and Lubrication for Quick Reference Use

Part	*Adjustment*	*Lubrication*
Brake, hub	On brake arm	Ask dealer
Brake, rim	Pads close but not touching	Light oil on friction parts
Chain	Just short of tight	Thin oil for inside of links; dry stick graphite for outside links; every 250 miles
Cyclometer	Wheel just engages the button	None
Free wheel	No side shake	Thin oil about every 300 miles
Gears, variable	As per directions on warranty; unscrew lock nut, adjust by milled nipple	Follow manufacturer's directions
Hanger	No side shake; should spin easily and noiselessly	Heavy oil every 200 miles
Hubs, coaster	Ask dealer or repairman	Ask dealer
Hubs, fixed	No side play; wheel to spin freely; valve weight should slowly end spinning	Heavy oil every 250 miles
Pedals	Should spin a few turns; tightness better than shake	Light oil every 250 miles
Steering head	Tight without stiffness or binding	Heavy oil every 100 miles

Chapter IV

WHAT TO WEAR FOR CYCLING

Cycling clothes today are comfortable, cool, and practical. Comfort and serviceability should be the standard for purchasing cycling dress. Any old clothes you have around the house will not do for cycling, i.e., if you desire to enjoy the sport to its fullest extent. The type of riding (racing, cross-country touring, hacking) you intend to indulge in will determine the clothing you should wear.

Your choice of materials will be governed by the following factors: (*a*) wear well; (*b*) look smart; (*c*) permit ventilation; (*d*) dry quickly without chilling the body; (*e*) are comfortable (soft and elastic). Wool and wool mixtures probably meet the above requirements better than the other fibers. A few popular fabrics for cycling are: whipcord, corduroy, serge, khaki, gabardine, flannel, and tweed. Leather does not permit adequate ventilation and for that reason is not advisable for cycling. Wool or cotton underclothing may be chosen according to the season. The use of silk or rayon is a matter of personal choice.

For summer wear a blouse or jersey and shorts are ideal. A thin pullover or other sweater is advisable for the cool evenings and early mornings. It is better than a coat or jacket, as it does not wrinkle, can easily be rolled up, and fits more snugly. Women may wear a skating skirt and shorts combination. A flannel jacket is dressy for luncheon or dinner at an inn. A wrap-around skirt may be carried, to be worn in places where shorts are not approved. Bicycling is warm exercise and the summer costume should be lightweight. Slacks and long trousers are not appropriate for cycling as the cuffs may catch in the chain or sprocket.

For fall and winter riding woolen plus fours and jacket are advisable. The plus fours are preferable to breeches, the full knees give greater freedom when pedaling. A short woolen divided skirt is warm, smart, and comfortable. For cold days ski pants are warm but baggy around the legs. A leather or paper vest offers chest protection against the cold winds. Light woolen underwear is comfortable and offers resistance against sudden chills while resting.

A racing costume consists of light woolen, silk, or rayon tights and quarter-sleeve jersey. Gloves and a crash helmet complete the outfit.

Cycling shoes are obtainable at bicycle dealers and are preferable to heavy, rigid golf and walking shoes. They are light, strong, flexible, and should be made of kangaroo leather with a special patch on the side and front for wear against the pedal. They are suitable for walking when on a tour, and other shoes need not be carried. Cycle shoes should fit into the toe clips and give a firm grip. For racing, metal blocks may be attached to the soles to fit into the serrations of the racing type of pedal, thus ensuring a positive hold. This, however, works to a disadvantage in case of a spill, when you wish to free yourself from the pedals. Sandals are used by some touring groups. Water drains from this type but little protection is offered from dust, pebbles, and dirt.

Riding a bicycle in the rain and on wet pavements is dangerous. Oil on the roadways, on trolley and railroad tracks makes skidding likely. But you may be caught in a shower or heavy rain while cross-country touring. Carrying an umbrella is awkward and dangerous. The English type of waterproof cape or sleeveless poncho is most practicable for wet-weather riding. It should cover both you and your wheel. The cape should have a gusset at the back to provide ventilation. Oiled silk or tightly woven, chemically treated cotton is better than oilskins and rubber; the latter are uncomfortable in warm weather. A cape with an attached hood avoids the trouble of carrying a sou'wester. Make sure that your cape is large enough to hang below the saddle at the back and right down to the forward extension of the mudguard at the front. A short cape will not protect your knees. A cape permits freer ventilation than a tight-fitting waterproof jacket. You might have your cycling knickers, divided skirt, or suit waterproofed to shed light showers. A waterproof corduroy is practicable. Oilskins should not be rolled up tightly when wet or the surfaces will stick together. Change into dry clothes as soon as possible after a wetting to avoid a chill.

Judge your cycling accessories for comfort, utility, durability, and appearance. It is advisable to wear some sort of headgear—a cap, beret, or kerchief—for protection against sunstroke, dust, dirt, and rain. Bright colors will identify you at a distance by both automobile driver and fellow rider. For bright days amber or dark-green sun glasses, eyeshades, or goggles are restful. The goggle gives complete protection from the sun, dust, cinders, insects, and pebbles. Stout horsehide gloves ease your grip on the handle bars, keep your hands clean, and offer protection when using your hand as a brake on the front wheel. Colored gloves serve as an added identification to motorists when you give your left- or right-hand turn signals.

In England cycling spats and waterproof leggings are popular. In the United States they are rarely used. For all-weather and winter riding they are excellent. Riding bare-kneed and barelegged is delightful in warm weather. Cotton or light woolen socks are cool and hygienic for summer wear and heavy, colored, pure wool golf stockings are warm and comfortable for cold days. A varicolored scarf completes a correct cycling costume.

Here is an approximate idea of the cost of cycling clothing and accessories:

Men		Women	
Item	*Cost*	*Item*	*Cost*
Cycling shoes	$5.50	Cycling shoes	$5.50
Sandals	2.75	Sandals	2.75
Woolen socks	.85	Woolen socks	.65
Woolen stockings	3.50	Woolen stockings	4.00
Gabardine shorts	1.50	Corduroy shorts	2.50
Corduroy knickers	3.50	Covert knickers	7.50
Woolen jersey	3.50	Silk blouse	7.50
Leather vest	4.00	Leather vest	4.00
Lightweight parka	6.50	Poplin jacket	5.00
Beret	1.50	Kerchief	.50
Horsehide gloves	2.00	Horsehide gloves	2.00
Goggles	.50	Sun glasses	.50
Raincape and hood	4.00	Raincape and hood	4.00
Racing tights	2.50		
Racing jersey	3.00		
Crash helmet	4.00		

Chapter V

HOW TO RIDE A BICYCLE

Almost everyone can learn to ride a bicycle. A youngster should master cycling in two or three lessons, while an older person may require a half dozen practice sessions.

There are two ways of learning to ride. One is to hire a professional instructor and the other is to ask the aid of a friend who rides. It is almost impossible to learn absolutely alone. If you decide to take professional lessons, your instructor will impart to you the theory and practice of pedaling and balance.

After you have secured a patient and willing friend (he need not be an expert cyclist), secure an old bicycle, as it will probably get a little shaken up. Lower the saddle until your feet reach the ground and you can straddle the wheel. Then adjust the handle bars so that your full weight does not rest on your wrists. Adjust and readjust until you assume a comfortable riding position. The ball of your foot should rest on the pedal. A slight bend in the knee when the pedal is at its lowest position is correct. You should not be cramped when the pedals are up or down.

Next you must find a level or slightly sloping path free from traffic of any kind. Automobiles racing by, as well as other cyclists and roller skaters striding close, may upset a beginner. It is most important to practice regularly on a quiet, open road.

After all adjustments have been made you are ready for your first attempt at balancing a bicycle. Place your pushing-off pedal a little forward of the top position. This gives you a powerful starting push. Your friend should steady the wheel by means of the handle bars and saddle post while you mount. In this position he can completely control the machine and avoid a spill, which may unnerve you at the start. You should attend to the bicycle and nothing else. Look well ahead of the machine.

Your friend will walk alongside pushing the machine gently as you ride. He may assist you in your efforts to steer. Hold to a straight course. He will lead you back and forth until you get "the feel of the bicycle." Should you tend to fall, hold your foot on the side toward which you are falling, and you will come down safely. You will find that turning the steering wheel slightly in the direction in which the machine is inclined to fall will recover your equilibrium. An hour is enough for the first lesson.

After you have the feel of the wheel, your friend may let you steer by yourself. If you can hold to a straight course you are ready to ride alone for a few yards. Your friend may now release his hold on the saddle post but keep alongside to lend moral support, and physical assistance in case you fall. Riding alone a few yards (like swimming) should give you confidence. Practice riding longer distances with your friend always alongside. Do not let go of the handle bars at any time, or you are sure to take a fall.

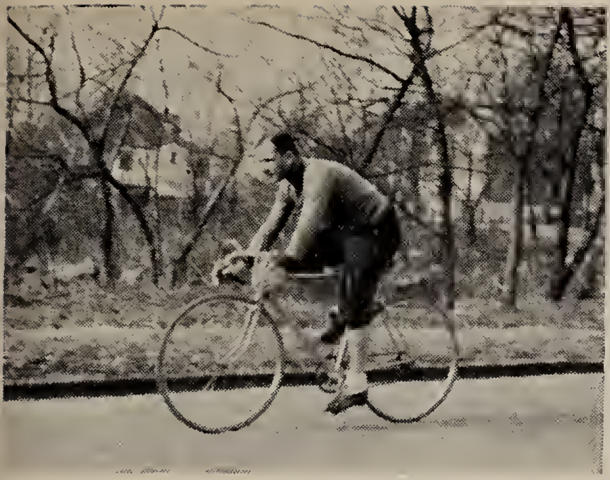
The next step is to learn to mount. Your friend will stand by and direct but give no physical assistance. Let him show you how he mounts. Note the position of the left pedal. Always mount at the right side of the road, with left pedal up. Hold the handle bar straight and steady for the push-off. It may be easier for you to mount from a curb or other slightly elevated place. Assuming you will mount from the right, lift your wheel slightly and move your left pedal into the starting position, i.e., a little forward of its highest vertical position. Always place your pedal in this position before you start; otherwise you will not secure an efficient push-off motion.

You are now ready to ride. Place your left foot on the left pedal, raise your body into the saddle, hold the handle bars straight ahead, and push off with moderate force. Of course, your right foot will have contacted the right pedal. Look ahead, not down, pedal evenly, and you are on your way.

You will now learn to dismount. You may have had enough involuntary dismounts. The simplest way to get off your machine is to slow up until you are barely moving, apply your brake, and as your wheel inclines to one side, reach for the ground with the foot on that side. Draw your other foot over (men's frame) or through (women's frame) the bicycle, taking care to hold the handle bars steady to prevent the pedal from striking the ground. Always dismount to the right of the road, away from traffic, toward the curb or shoulder of the highway. Daily practice in mounting and dismounting, aided by your friend, will soon enable you to control your wheel.

Correct position and pedal motion will greatly add to your pleasure in bicycling. If your push on the pedal is too much in a diagonal direction forward and downward, there is a resultant loss of power in propulsion. Your most powerful and easiest push is obtained by a motion of the leg and foot nearly vertical; and with the foot kept bent downward from your ankle. To secure proper pedal motion, adjust your saddle to such a height that at the full stroke of your leg the sole of your foot will rest easily and firmly on the pedal. Push hard on your downward movement and yield to your upward movement. The reverse of this movement is known as backpedaling. Backpedaling is necessary for quick stopping in traffic or on grades, especially when your bicycle is not equipped with hand brakes. Aim to pedal evenly, exerting similar pressure on each foot. Uneven pedaling will tend to deflect your wheel from a straight line.

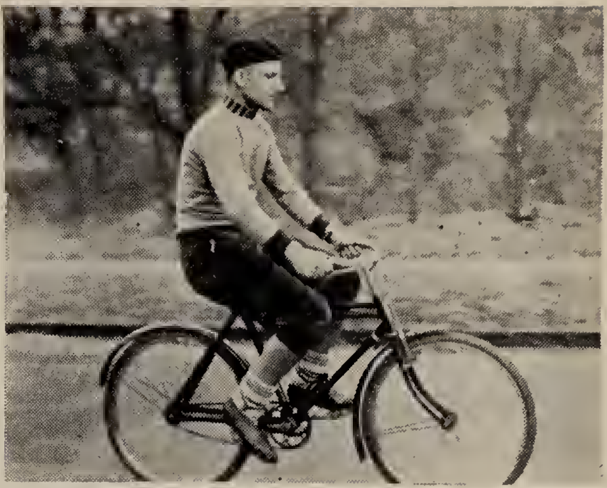
Your position on the bicycle will depend upon the kind of riding you intend to do. It is well to adjust your handle bars so that two or three different positions may



Correct Pleasure Riding Position

Forward position, rider's weight equally divided between the two wheels, handle bars within comfortable reach. Bar is about the width of the rider's shoulders. A four-speed touring model

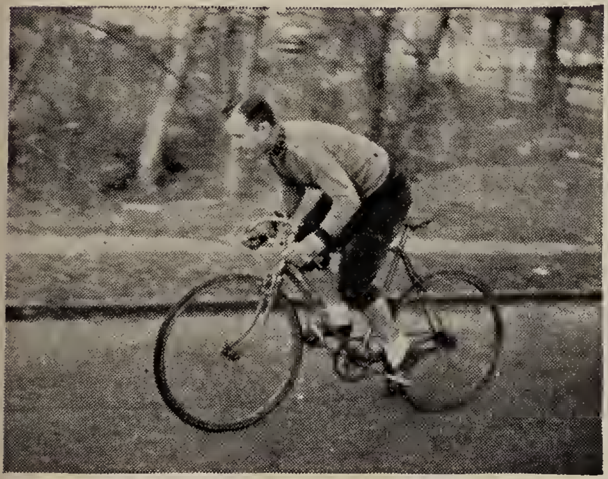
Weight—20 pounds



Incorrect Pleasure Riding Position

Avoid this stiff erect position, tight grasping of handle bars. Frame too small, knees touch handle bars when turning. This rider will be uncomfortable after a few miles of riding. A free-wheel model

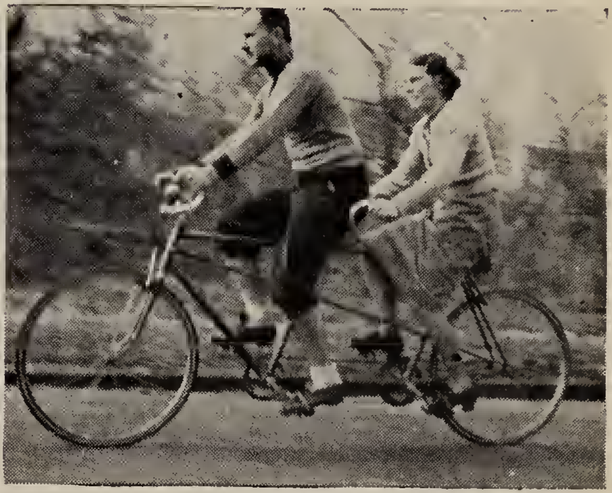
Weight—40 pounds



Correct Position for Racing

Position low, shoulders back, giving lungs free play. A lifting of the body out of the seat "winds" up the high gear usual on racing wheels. A road-racing fixed-gear model

Weight—26 pounds



Correct Position for Tandem Riding

First rider is the steersman, the second, the pusher. Slightly forward pleasure riding position assumed by both riders. The pusher holds close to the steersman. Touring model, 92 fixed gear

Weight—39 pounds

be assumed while riding. This will provide the necessary relaxation on a long run. The stiff, straight "monkey on the stick" position is incorrect. It is tiring and offers no resistance to the wind. Your body should be carried a trifle forward, on much the same principle as you lean forward a little when ascending stairs. If there is a strong wind or you wish to ride faster, bend your body forward and thus apply your power to best advantage. For racing you should sit well over your hanger in the "grasshopper" position, at least while sprinting on the road or track. Your head is kept up and held still, your more or less crouched body presents less surface to the wind. Correct position and pedal motion give speed and ease in bicycling.

Hills lend interest and provide extra effort for the rider. An expert rider seldom dismounts. Dismounting means lost time in a cross-country run. However, it is well to dismount if you are fatigued, and walk up a steep hill, thus resting your cycling muscles. Uphill riding presents little difficulty if you are riding a variable-geared machine. If you are riding a fixed-gear bicycle you may attempt a steep grade by one of two methods. The first way is to "rush" the hill, if it is not too steep or long: get up a certain amount of speed (steam) on the level or downhill before making the ascent. The second method is to pedal slowly and evenly up the grade. Make sure that every stroke counts toward bringing you over the top. Never try to mount on an upgrade unless you are an experienced rider.

Sometimes downhill riding is more difficult than uphill riding. You must have perfect control of your wheel and be sure that the brakes hold well. Keep your machine under control until you can see the bottom. Never permit the cycle to acquire such momentum as to make it impossible for you to stop it within a few yards. Backpedaling will aid in controlling your fixed-gear machine. If you ride a coaster-brake bicycle, apply the brake slowly and evenly. Hand brakes should also be applied gently and evenly. Never take your feet off the pedals in downhill riding. Sometimes it is best to dismount and walk down very steep grades, especially if your brakes are not in first-class shape. You are the best judge of your strength and control.

Riding against a strong head wind presents a problem to the beginner. Like the pedestrian, who leans forward into the wind, the cyclist should lean forward and thus offer less resistance. You should also use a lower gear, which gives you more power but less speed. On a long pull such as a century (100 miles) or half century (50 miles) run a strong wind is most disadvantageous. Where there are several riders in the group a system of pacing may be used. The stronger pair of riders take the lead, the others follow close behind and ride in the sheltered position. The leaders, or pacemakers, form a windbreak. The pacemakers should keep an eye on the followers so as not to ride too fast, opening a gap and losing the advantage of pace setting. A weak or inexperienced rider can thus ride without the strong wind resistance, and complete the long run. If the group is large, different sets of pacemakers may lead, changing every ten or fifteen minutes. The art of pacing has enabled many a novice to complete his first century run.

Chapter VI

HOW TO ORGANIZE A CYCLING CLUB

There is always fun in doing something together. Back in 1878 England had 230 cycle clubs and the United States 11. Today the figures show England with 2,000 and the United States with about 100. The club has always been a favorite organization with most Englishmen.

Club organization aids both the sport in general and the individual cyclist. Clubs make a favorable impression on the public, their united influence may win protection and privileges, and they are an important factor in the development of cycling. To the individual the club offers good-fellowship and companionship, a stimulus to excellence in riding, comparison of experience, an opportunity to participate in parades and demonstrations, and the advantage of lower transportation rates and discounts when buying wheels and equipment. According to Charles E. Pratt, "They promote, in short, like all other societies and associations, both individual and collective enjoyment, while they mold public sentiment and unite forces for defense and advancement."

It is desirable to form a cycle club wherever there is a small group of persons who ride the bicycle with enthusiasm, are congenial, and live near enough together. In addition, it is well to have some definite aims for the establishment of the group, such as road racing, track racing, cycle camping, local touring, and touring abroad. Groups may organize along lines of common interests, such as college men and women, teachers, lawyers, printers, newspaper workers. If the group is too small to start a club of its own it might be well to join one of the established clubs or possibly a division of the parent club, such as the Long Island Division of the Century Road Club Association. The College Cycle Club was formed to foster short- and long-distance tours for graduate and undergraduate college men and women.

If you decide to start a new club you must arrange for publicity, first meeting, choice of appropriate name, model set of rules, officers, headquarters, membership dues or fees, costume, membership qualifications, and proposed activities. As the promoter you will probably be elected president or secretary. You should not accept this position unless you have and are willing to give much spare time to this activity.

Your publicity program will consist of the insertion of notices about the club formation in local newspapers, in bicycle repair shops, and with dealers. Cycling magazines and newspapers will usually be glad to cooperate with you. Posters may be placed at or near cycle paths. Mimeographed sheets may be handed to any likely looking riders on the road. School, college, and trade papers and magazines also may be notified and readers invited to join. Notices may be handed out at race meets, parades, and professional events. Another publicity stunt would be to ride a high wheel, dressed in a costume of 1890, down the main street, with a notice "Hear Ye! Hear Ye!"

For the first meeting it is well to plan a definite program, and conduct it on time in a businesslike manner. Avoid unnecessary expenses. The College Cycle Club of New York was organized and held its first meeting in the rear coach of the first New Haven cycle train returning to New York, April 26, 1936. A local community building or public-school room might be selected for the organization meeting.

The choice of name may be left to a vote of the group. It is not proper or legal in some cases to take the name of an old club now out of existence. The club name may be selected from the locality, school or college, professional group, or nationality; it may be that of an organizer or champion, or a general word denoting excellence—Acme, for example. The name may include the word "wheelmen," which has been selected by 27 groups in the United States. "The . . . Bicycle Club" is probably a more appropriate title when women are invited to membership. "The . . . Cycle Club" also is popular.

In the preparation of a constitution or rules and regulations it is well to use as a pattern some existing set that has been in successful operation. An outline model follows:

CONSTITUTION OF THE . . . BICYCLE CLUB

Article I—Name
Article II—Objectives both general and specific
Article III—Officers—president, vice-president, secretary-treasurer, captain, lieutenant, guide, hostess
Article IV—Duties of Officers
Article V—Club Business Meetings
Article VI—Order of Business
Article VII—Rules of Order
Article VIII—Chairman
Article IX—Visitors
Article X—Membership—Active and Honorary
Article XI—Dues
Article XII—Road Rules
Article XIII—Annual Race for Club Championship
Article XIV—Club Racing
Article XV—Club Uniform and Colors
Article XVI—Expulsion
Article XVII—Amendments

The duties of the club officers should be carefully described in the constitution. The president, who usually presides at the meetings, should be a person of importance to lend prestige; he need not be a champion rider. The vice-president may sometimes be a former president. The secretary-treasurer should be ready to give time and energy to club affairs. He should be a good rider, with pleasing manners and personality. The captain must also be an enthusiastic and good rider and possess the qualities of good-fellowship. In some clubs the captaincy is awarded to the champion of the club. The lieutenant acts as assistant to the captain. In touring, the guide plans the routes, stops, etc., and he acts as one of the pacemakers. If women have been invited to a club run or social affair, a hostess should be present to welcome the newcomers and make them feel at home. She will perform the introductions and be in charge of serving the food.

In former years bicycle clubs had luxurious clubrooms with lower rooms for cycle storage. Most city clubs cannot afford this heavy expense and usually hire clubrooms for meetings once or more a month. It is well to have a mailing address—(post-office box number or home of secretary). If there is no formal organization, meetings may be held on club runs or on cycle boats or trains.

Membership dues and initiation fees should be as low as possible. Idle money in the treasury is often a source of trouble. Fees should be based on the lowest amount on which the club can be operated. The usual dues are from $1 to $5 per year. Club expenses should be pared to the lowest figure covering stationery and postage, meeting-room rental, dues to the race-sanctioning association, and printed constitution and membership roster.

A uniform means as much to a bicycle club as it does to the army or navy. It affords a distinctive mark of membership, lends a better appearance to a club run or parade, helps in winning the club costume award. The uniform should be worn on all runs and in competitions. If the club is large, two costumes may be chosen: one for road and track racing, the other for club touring. A distinctive two-color (complementary) jersey bearing club insignia or emblem or letters and a beret with club button make the basis for a good uniform. For touring, the emblem is worn on front; for racing, letters are placed on the back. Knickers or shorts of corduroy, flannel, or tweed are inexpensive and durable. Dark shades of blue, gray, brown, or green are less likely to show the dust of the road. Avoid white or yellow except for night riding. Jersey, beret, and short divided skirt will make an attractive costume for women.

If the members cannot afford to purchase a complete uniform, the wearing of the standard club jersey and beret will make a neat appearance. In former years dark and subdued colors were correct for club wear; but today vivid colors are advisable to distinguish the riders in a race and also for easier discernment by the motorist. Some color combinations used by metropolitan clubs are: orange and blue; black and white; black and red; blue and white; black and gray; green and yellow.

Membership qualifications will be based on the type of riding and group you desire to attract. Professional athletes must be excluded from membership in an amateur club. An interest in cycling and some riding ability are the usual requirements for membership. Decide at the beginning if you will limit the group. If so, make it plain to all applicants that only persons belonging to a certain profession or calling are eligible. Select carefully at the beginning, for it is difficult—in fact, almost impossible—to weed out undesirables later. A test of riding ability, regular attendance on runs for a probationary period, and congeniality might be standards for applicants. Honorary membership may be granted to any person who has distinguished himself in the encouragement of bicycling or has rendered the club important services. Likely riders are to be invited as club guests on tours and other activities without any feeling of examination by regular members.

Activities of many kinds should be fostered besides club races, century runs, roller races, exhibits, parades, and tours. Ice skating and roller skating develop cycling muscles. Walking should not be despised. Nature study and photography lend themselves to touring. Trips to places of historic interest are pleasant and instructive.

According to available records, the oldest bicycle club was the Pickwick Bicycle Club formed in England on June 22, 1870. It took its name from the book by Charles Dickens and each member took a name from the pages of *The Pickwick Papers.* The captain of the club was Pickwick. Other old English clubs include: Stanley Cycle Club; London Bicycle Club, formed in 1874 and composed of many university men; Surrey Bicycle Club, founded in 1871.

With the growth of many small and large clubs in England it was felt that a governing body was necessary. In 1878 the National Cyclists' Union (N.C.U.) was formed; it was then called the Bicycle Union. The objects were: to secure road rights, to aid in legislation, to lower railway tariffs on cycles, and to frame rules for racing. It corresponds to our Amateur Athletic Union. Today the N.C.U. is one of the leading cycling organizations of England. It promotes cycling interests generally, and gives legal assistance when necessary, and rules out any dishonest practices in cycling competition.

The Cyclists' Touring Club, known as the "C.T.C.," was the largest cycling organization in the world. It had 38,049 members in 1938. Founded at Harrogate, England, August 5, 1878, as the Bicycle Touring Club, its leading objects were: to encourage and facilitate touring in all parts of the world, to protect its members, to provide touring companions, to secure fixed and reduced hotel rates, and to establish leading wheelmen as "consuls" in towns to offer information. Today it is located in London and helps wheelmen in planning and conducting cycle tours, arranges hotel accommodations, and provides a badge and maps and periodicals. It has secured reduced railroad rates for cyclists, erected signboards, and fostered road improvements. It is open to men and women in amateur standing. It corresponds to our League of American Wheelmen. If you intend to tour England or continental Europe awheel, it is advisable to join this organization located at 3 Craven Hill, London, W.2, England.

A partial list of our old bicycle clubs with original membership follows:

January 5, 1878, Boston Bicycle Club of Boston	35
April 8, 1878, Suffolk Bicycle Club of Boston	42
Nov. 28, 1878, San Francisco Bicycle Club	12
August, 1878, Bangor Bicycle Club of Bangor, Maine	20
January 31, 1879, Capital Bicycle Club of Washington	8
February 21, 1879, Fitchburg Bicycle Club of Massachusetts	6
February 22, 1879, Buffalo Bicycle Club of Buffalo	10
January 10, 1879, Massachusetts Bicycle Club of Boston	17
March 8, 1878, Essex Bicycle Club of Newark, New Jersey	10
March 14, 1878, Salem Bicycle Club of Salem	12
April 9, 1879, Worcester Bicycle Club of Worcester	12

The League of American Wheelmen was formed on Monday, May 31, 1880, at Newport, Rhode Island. Its organizers were Kirk Monroe of New York and Charles E. Pratt of Boston. Mr. Pratt was the chief organizer of American cycling and its first authoritative writer. The L.A.W. was to combine the best points of the English Bicycle Union and Bicycle Touring Club. The League's first president was Charles E. Pratt. In 1881 the membership rose to 1,654, and in 1884 it was 4,250. In 1885 the *L.A.W. Bulletin*, a journal devoted to the interests of cycling in America, was published weekly at $1 per year. The objectives were: to promote the general interests of cycling, to ascertain, defend, and protect the rights of wheelmen, to encourage and facilitate touring, and to regulate the government of all amateur sports connected with the use of the wheel. It was a national organization composed of state divisions of 25 or more members. Any amateur eighteen years of age or over was eligible for membership. Yearly dues were $2. The L.A.W. still exists with headquarters in New York and until a few years ago issued its *Bulletin*. Upon payment of 50 cents an attractive button and a membership card are issued.

Since the decline of the League of American Wheelmen, the National Cycling Association has become the governing body for amateur cycling in the United States. The N.C.A. appeared to become more interested in promoting professional track racing; it held few amateur contests and did little to encourage amateur cycling. The former Inter-Club Amateur Road Racing League conducted road racing in New York City for the metropolitan bicycle clubs for many years. An active amateur national governing body was lacking.

Out of this situation was born the Amateur Bicycle League of America in 1920. This young governing body grew rapidly. For the past fifteen years it has conducted national road championship races. The National Cycling Association still retained jurisdiction over amateur races conducted in velodromes, of which there are few in this country. Some 80 active cycling clubs are now affiliated (see list in Appendix) with a registration of almost 2,000 wheelmen. In May, 1937, the A.B.L. of A. extended its control to cover all amateur cycling events in the United States. In the fall of 1938 the association sent out a questionnaire to all known amateur cycling clubs of the United States as to matters of name and policy. The results gave evidence of a vote of confidence to Secretary John McIntyre and his committee. Under date of January, 1939 the A.B.L. of A. brought out the first number of its *Bulletin* under direction of editors Wuertz, Isola, Burke, and Knauth.

The Cycle Trades of America is a nonprofit association of 11 bicycle manufacturers and 29 accessories and parts manufacturers and wholesalers organized to promote cycling. They have published helpful booklets, among which are, *Smart Riders* and *Bicycling for Health and Pleasure*, preaching the doctrine of safety. They also disseminate information as to cycle paths and stimulate popular interest in bicycling.

Chapter VII

WHERE TO RIDE IN THE UNITED STATES

Bicycle touring offers you an ideal low-cost weekend or vacation. You are not tied down to train, steamship, or plane schedules; you may rest at any spot that takes your fancy, ride fast or slowly to suit your mood. Touring gratifies your latent love of adventure. New roads, new faces, and unfamiliar landscapes are always interesting.

Before joining a group or making a tour by yourself, you should become an experienced rider. Regular practice runs about twice a week covering about 25 miles will be sufficient preparation for a one-day, 50-mile tour. For a two-week or two-month vacation tour you should practice riding at least a month previous to the day of departure. A 50-mile run each weekend should be sufficient preparation for a vacation run.

A solitary tour is not advisable, because you may require aid in case of sickness or accident. It is also more pleasant to enjoy the sights with a friend. Large groups are inadvisable for an extended tour. The whole party must proceed at the pace of the slowest rider, which is irksome to the more experienced. However, this may be solved by separating the party into two groups, a fast division and a pleasure (slow) division; both groups meeting at the destination each evening.

The establishment of American Youth Hostels in 1934 gave a new interest to bicycle touring. By 1939 about 200 hostels had been opened in eight regions of the United States. Farmhouses and transformed barns housed 12,000 pass holders traveling under their own power. The hostels are located in loops about 15 miles apart, within easy hiking or biking distance. Membership in the American Youth Hostels, Inc. costs $1 for those under twenty-one years of age and $2 for those who are older. The age limits are four to ninety-four. Anyone may join the A.Y.H. by sending the proper membership fee to National Headquarters at Northfield, Massachusetts. Membership brings you a pass that admits you to 4,500 hostels in 20 countries at a cost not exceeding 25 cents for an overnight stop. You will also receive a year's subscription to a quarterly publication, the *AYH Knapsack.* In some foreign countries railroad reductions are granted members, and many museums which charge admission, grant free entrance to pass holders. Bicycles may also be rented at Northfield. In 1939 seven United States bicycle tours of about two months' duration were sponsored, costing from $95 to $200. Cycle touring equipment may also be purchased from the national headquarters at Northfield, Massachusetts. The suggested daily mileage is 30. Early to bed and rise; no drinking or smoking are a hosteler's rules. You can easily travel awheel on $1.00

a day (25 cents for overnight and 10 cents for fuel, balance for food). With the ever increasing cost of motoring, hosteling by cycle should present a great appeal.

The United States is divided into eight hostel sections:

I. *New England*—Massachusetts, Connecticut, Vermont, New Hampshire, Rhode Island, and Maine
II. *Middle Atlantic*—New York, New Jersey, and Pennsylvania
III. *Great Lakes*—Michigan, Wisconsin, Illinois, and Indiana
IV. *Middle Central*—Missouri and Iowa
V. *Rocky Mountain*—Colorado
VI. *Northwest*—Washington and British Columbia
VII. *Southwest*—Northern California
VIII. *Southeast*—North Carolina, Tennessee, Georgia, and West Virginia

The Canadian Youth Hostels Association has established hostels in British Columbia, Alberta, Ontario, Quebec, Manitoba, New Brunswick, and Nova Scotia.

If you plan to enjoy a cycle tour lasting two weeks or a month you must prepare yourself. Among the matters that must be considered are: (*a*) condition of your wheel; (*b*) route; (*c*) accommodations; (*d*) what to carry; (*e*) what to wear; (*f*) the approximate cost of the tour.

Carefully examine your bicycle as to condition of the tires; if in doubt, purchase new ones. Try out your pump. Spin the wheels and see if free running. Examine the chain, note if it is clean and properly lubricated. Try out the brakes on a steep grade. Try each nut to see that it is secure. If you intend riding in hilly country change to a lower gear or install a two- or three-speed mechanism or coaster brake. Feel each spoke to see if it is at proper tension. Oil all the bearings, especially the hanger, hubs, head, pedals, etc.

In planning your route consider hard-surfaced roads, scenic beauty, traffic conditions, topography, detours, locations of youth hostels, Y.M.C.A.'s and Y.W.C.A.'s, weather conditions, visits to relatives, national and state parks, points of historic interest, interesting industries or manufactures, resorts with boating and bathing, and points on railroad and steamship lines with low-cost return fares. The *American Youth Hostel Handbook* and railroad and steamship folders offer suggestions for cycle tours. Probably the best and most recent guides for the individual states are the volumes comprising the American Guide Series written by the Federal Writers' Project of the WPA. Your local cycling groups will have arranged weekend and vacation tours awheel.

Youth hostels offer the lowest cost and most primitive accommodations. The Y's offer rooms or dormitories with showers available at about 75 cents a night. Tourist homes and tourist cabins for autoists usually charge about $1 a night. They are often located just outside the city limits on main motor routes. Commercial hotels also offer low-cost accommodations. It is better not to reserve overnight accommodations in advance, unless your party is large, for you may not be able or wish to hold to your schedule owing to bad weather, tire trouble, or the desire to remain another day at a pleasant spot. Before you accept the accommodations be sure to look around and satisfy yourself that the place is clean and quiet (away from the railroad) with safe and dry storage for your wheel.

Take as little luggage as possible. Purchase articles en route as required. Let your bicycle be your beast of burden, avoid carrying things on your back, which is both unpleasant and dangerous. Aim to distribute the luggage burden between the two wheels. A practical carrying outfit consists of an English touring bag attached to the saddle and a small cloth rucksack slung over the handle bars. Both should be firmly secured to your bicycle. Another plan is to have parcels mailed to a post office on your route. This arrangement will not permit you to change your plan.

A check list of things to take on a tour may include:

Cycle Supplies

Pump and connection
Extra tire or tube (folded)
Puncture repair outfit
Complete set of spanners
Chain coupling link
Fresh valve stem and cap
Oil and graphite
Flashlight and fresh battery

Personal Equipment

Sweater or windbreaker
Change of underwear
Change of stockings or socks
Raincape with hood
Toilet articles
Slacks or skirt for change
Folding drinking cup and knife

Cycle Supplies

- Extra set of web straps
- Tire cement in tube
- Route maps and pencil
- A.Y.H. pass and addresses
- Small sewing kit

Personal Equipment

- First-aid outfit and adhesive
- Handkerchiefs
- Camera and film
- Sleeping sack if hosteling
- Boy Scout mess kit if hosteling
- Cash in form of traveler's checks

Pack your bag carefully and wrap metal items in a woolen cloth to avoid rattling. The pump is usually attached to the frame by means of spring clamps at each end. Souvenirs and exposed film may be sent back by parcel post. Don't attempt to carry everything you possess.

As bicycling is a warm sport, your touring clothing should be light in weight. Two thin sweaters or jerseys are warmer than one heavy garment. You may shed one as required by the temperature. A sports khaki or gray shirt appears to soil less quickly than one of a lighter color. If you intend to do some sightseeing afoot, have rubber heels attached to your cycle shoes. Sun glasses or goggles and cap or beret afford protection from the glare and dust and dirt of the highway. A wrist watch is handy.

The cost of your youth hostel cycle tour should be about $1 a day if you do your own cooking. Here is an approximate estimate of touring costs per day in the eastern United States:

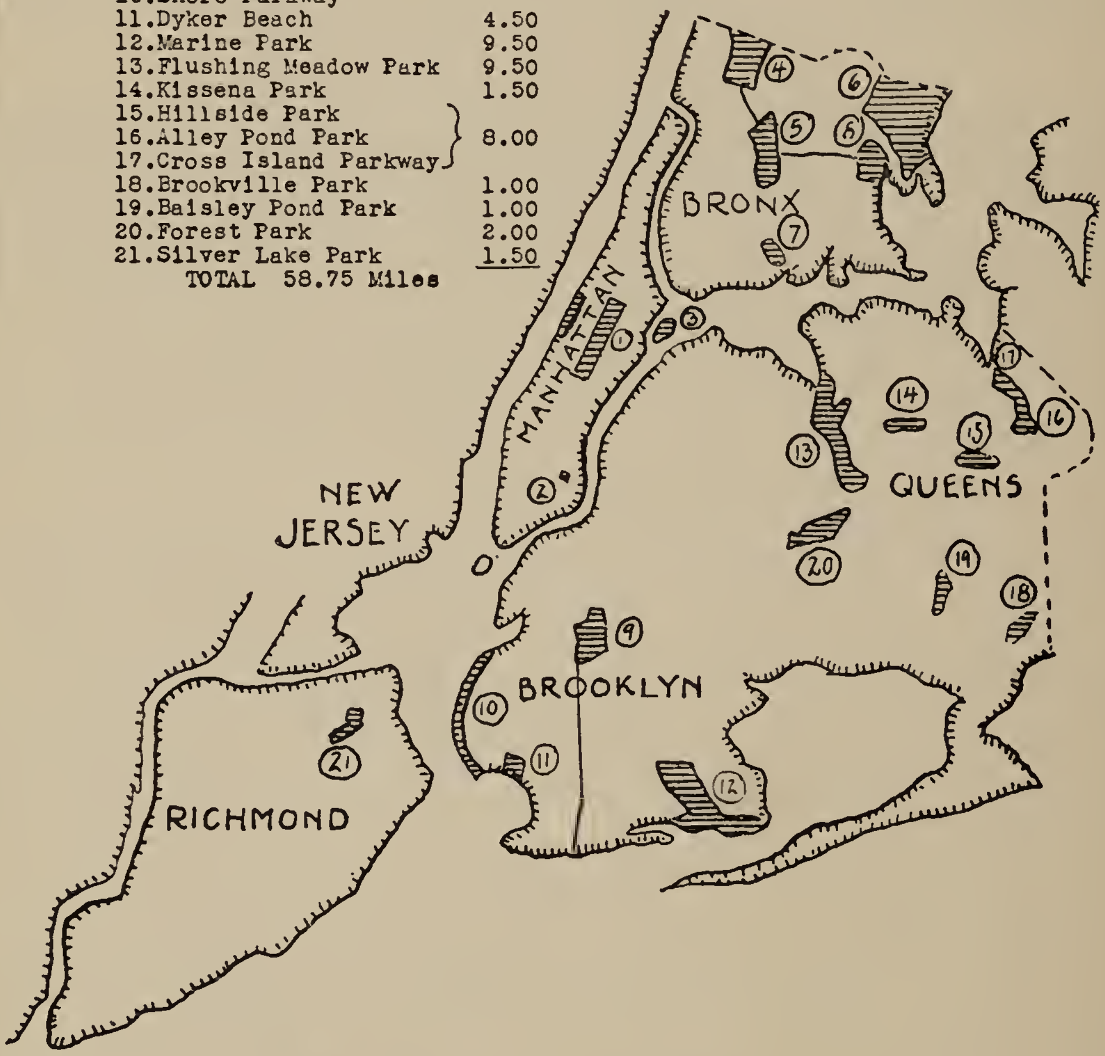
Liberal Plan		*Economical Plan*	
Breakfast	$ .50	Breakfast	$ .25
Lunch	.50	Lunch	.35
Dinner	1.00	Dinner	.50
Lodging	1.00	Lodging	.75
Extras	.50	Extras	.15
Total per day	$3.50	Total per day	$2.00

If your group is large you may cut down expenses by purchasing fruit, etc., in quantity. Other economies may be effected by doubling up at lodgings and stopping off at larger cities and towns where prices are lower. The use of railroads, steamships, ferries, and toll bridges add to the cost, yet cycling is still the most economical method of transportation.

Cycle paths have not been established to any extent in the United States. The avoidance of the heavy automobile traffic is a really serious problem for the bicyclist. One solution is to ride during the early morning hours, preferably before eleven o'clock. A second solution requires the use of an automobile or a cycle train or steamer to get out into the country to enjoy a day's riding on secluded byways. This is expensive and requires early rising and a late return to the city and a resultant ride home in the dark from pier or railroad terminal. Until America becomes bicycle conscious and builds cycle paths comparable to those of Europe, the pleasures and healthful benefits of cycling will not be made available to the great mass of people. Why

KEY

1.Central Park	5.25 Miles
2.Tompkins Square Park	.12
3.Ward's Island	.25
4.Van Cortlandt Park	9.0
5.Bronx Park	
6.Pelham Bay Park	
7.Sound View Park	.13
8.Pelham Bay Park	.25
9.Prospect Park	5.25
10.Shore Parkway	
11.Dyker Beach	4.50
12.Marine Park	9.50
13.Flushing Meadow Park	9.50
14.Kissena Park	1.50
15.Hillside Park	8.00
16.Alley Pond Park	
17.Cross Island Parkway	
18.Brookville Park	1.00
19.Baisley Pond Park	1.00
20.Forest Park	2.00
21.Silver Lake Park	1.50
TOTAL	58.75 Miles



MAP OF THE CITY OF NEW YORK SHOWING

PROPOSED LOCATIONS OF BICYCLE PATHS

1938

shouldn't some federal and state funds be made available for such a worthy public project?

About 1935 the New Haven Lines operated cycle trains out of Boston to the White Mountains. A year later the first cycle train was run from New York City to Canaan; others followed to Saybrook, Falls Village, and Farmington, Connecticut and Poughquag, New York. Routes were laid out and marked with red arrows over side roads, maps were distributed, and enjoyable one-day tours were inaugurated. The Lehigh Valley Railroad followed by operating cycle trains to Glen Summit and White Haven, Pennsylvania. The long train ride, the short cycle trip (about 20 miles), the late arrival back in New York, and the cost ($2) have detracted somewhat from their popularity.

In the spring of 1938 the Hudson River Day Line operated a cycle steamer from New York. You rode your own wheel or hired one at Poughkeepsie. The route was through Vassar College, Wappingers Falls, Hughsonville, to Beacon. Here a ferry was boarded for Newburgh, where the return Day Liner was met. During the summer of 1939 cycle cruises were established by the Colonial Line. This was a three-night and two-day all-expense bicycle tour from New York to Providence and New Bedford and return for $11.75.

HUDSON RIVER DAY LINE—CYCLE STEAMER—*June 12, 1938*

The cycle ride today is from Poughkeepsie to Newburgh, a distance of 19 miles, and is comparatively level after going up the hill which leads from the pier at Poughkeepsie through the city. The route passes Vassar College and goes through historic Wappingers Falls and Hughsonville. Shade trees cover most of the road and there are shady country fields which make ideal rest spots.

The Route. After docking at Poughkeepsie, go straight up Main Street 2 miles to the intersection of Route 376. Turn right and continue 3½ miles to Colonial Inn. From Colonial Inn go straight ahead on Vassar Road 5 miles to Wappingers Falls. From Wappingers Falls take Route 9-D into Beacon. The road is well marked all the way.

Time. The route has been tested by three average cyclists who covered the route in 2 hours without any special effort. It is suggested that you allow 2½ hours running time. This will leave 1½ hours for rest periods and sightseeing if you get away from Poughkeepsie promptly. It is important that you leave Wappingers Falls, the halfway mark, not later than 3:30 P.M., D.S.T., and that you catch the 5:15 ferry from Beacon to Newburgh.

Rest and Refreshment. Dining room and cafeteria service is available both ways on the steamers. The first rest rooms and refreshment stand are about 5 miles from the start of the route. From this point on, they can be found at intervals of about a mile all the way to Beacon. Colonial Inn will not be open to the public.

Caution. Both city and state police are cooperating to reduce traffic hazards. Cyclists should obey the traffic signals and should ride in single file. Use particular caution crossing the intersection of Route 9, which is a heavily traveled road. Care should also be exercised while passing through the towns of Poughkeepsie and Beacon, particularly on the long hill going down to the ferry at Beacon.

Ferry. The cycle route leads to the ferry slip in Beacon and the dock in Newburgh is adjacent to the Day Line pier. The charge for crossing is 10 cents, including the bicycle.

IMPORTANT!

The return steamer to New York leaves Newburgh at 5:45 P.M., D.S.T. There will be no later boat. It is imperative that you catch the 5:15 ferry from Beacon to Newburgh.

The parks of New York, Chicago, Philadelphia, Boston, Washington, and other cities still offer pleasant early-morning spins. They are free and timetables need not be considered. Atlantic City has opened a section of its boardwalk for cycling.

NEW ENGLAND CYCLE TRAIN—SPRING, 1939

RIDE IN THE UNITED STATES

WHERE TO RIDE

One-Day Trips from New York City

AREA	DESTINATION ROUTE (side roads where possible)	MILEAGE (From and to Columbus Circle)
Hudson River Valley	Nyack-Tarrytown via Washington Bridge US9W ferry to Tarrytown, Yonkers	49
	* Bear Mountain via US9 and Bear Mountain Bridge—return via boat or train $.75	46 (one way)
	* Poughkeepsie via boat $1.50—pedal to Newburgh, to Bear Mountain—boat return	35 (one way)
	* Bear Mountain via NJ2 Suffern, Tuxedo, Interstate Park—return via boat $.75	61 (one way)
* Via Hudson River Day Line cycle boats. See newspapers for schedule	* Beacon—via boat to Newburgh, US9D to Indian Point, return via boat $1.25	25 (one way)
	* West Point—via boat to Newburgh US9W to West Point, to Bear Mountain, boat return $1.25	18 (one way)
	* Poughkeepsie, via US9 to Bear Mountain Bridge, US9W to Newburgh—return via boat $1.50	64 (one way)
Long Island	Coney Island via Manhattan Bridge, Flatbush Avenue, Prospect Park, Ocean Boulevard	30
	World's Fair via Queensboro Bridge via Queens and Harding Blvds.	18
	Rockaway via Flatbush Avenue—return via Lawrence	34
	Long Beach via Queens Blvd., Merrick Road, and Rockville Center	64
	Whitestone—via Queens Blvd. to World's Fair to Whitestone Bridge to Bronx to Pelham Bay to Bronx Park to Van Cortlandt Park to Riverside Drive	29
	Hempstead Lake State Park via Queens Blvd. and Merrick Road	48
	Alley Pond Park via Queens and Harding Blvds.	25

Note: Many of the Long Island Parkways have recently been closed to bicycle traffic; check with service station information bureaus

WHERE TO RIDE (*Continued*)

One-Day Trips from New York City (*Continued*)

AREA	DESTINATION ROUTE (side roads where possible)	MILEAGE (From and to Columbus Circle)
New Jersey	Atlantic Highlands—Battery—St. George Ferry—Tottenville, Perth Amboy—return via Sandy Hook Line boat of Jersey Central $2	58 (one way)
	Old Tappan via Washington Bridge, US9W and NJ201 Harrington Park	60
	Suffern—Nyack via NJ2 Allendale, Mahwah, Suffern, Spring Valley, Nyack—ferry Tarrytown, Yonkers	60
Staten Island	Tottenville via St. George Ferry and Hylan Blvd. and return	44
	Richmond via St. George Ferry, Victory Blvd., Richmond Avenue, and return	30
	South and Midland Beaches via Fingerboard Road and Hylan Blvd.	24
Westchester	White Plains via Concourse and Central Avenue	40
	New Rochelle via Pelham	30
	Rye via Larchmont	40
	Kensico Reservoir via Central Avenue and White Plains	46
	Kingsland Point Park via US9, Dobbs Ferry, Irvington and North Tarrytown	46
	Silver Lake Park via White Plains and Central Avenue	44
	Manursing Island Park via Boston Post Road near Harrison	50
	Saxon Woods Park via Mamaroneck and White Plains Road	40
	Hudson Park via Boston Post Road, Pelham	30
	Sleepy Hollow, North Tarrytown—visit Washington Irving's Headless Horseman, Bridge, and Cemetery	40
	Woodland Lake via Central Avenue and Saw Mill River Road return via Hastings	32

Note: Bicycles not permitted on Westchester parkways

Two-Day Trips from New York City

		MILEAGE (From and to Columbus Circle)	
AREA	DESTINATION ROUTE	Daily Run	Total
Hudson River Valley	Albany: (1) US9 via Peekskill and Beacon to Poughkeepsie	78	
	(2) Poughkeepsie, Hudson, Rensselaer, Albany—return via night boat	70	148
	Ashokan Reservoir: (1) US9W to Kingston via West Point, Newburgh	92	
	(2) US28 around reservoir back to Kingston—return boat	46	138
	Catskill: (1) Boat to Catskill, pedal on US9W to Lake Mohonk	25	
	(2) Mohonk, New Paltz, Highland to Newburgh—boat return	46	71
Long Island	Port Jefferson: (1) Hempstead Pike to Huntington, Kings Park, Smithtown	79	
	(2) To Patchogue, Bayshore, Babylon, Freeport, Valley Stream	78	157
	Oyster Bay: (1) Northern Boulevard, Great Neck, Roslyn, Oyster Bay	46	
	(2) Ferry to Stamford, pedal Greenwich, Rye, New York	34	80
	Port Jefferson: (1) Hempstead Pike to Huntington, Smith, Port Jefferson	79	
	(2) Ferry to Bridgeport, pedal Norwalk, Stamford, New York	60	139
New Jersey	Asbury Park: (1) Via Staten Island, Red Bank, Long Branch	56	
	(2) Return via Atlantic Highlands and Perth Amboy	61	117
	Lake Hopatcong: (1) Via 42nd St. Ferry, Passaic, Rockaway, Dover	52	
	(2) Return via Boonton and Paterson to Washington Bridge	55	107
	Greenwood Lake: (1) Washington Bridge, Paterson, Pompton, Erskine	53	
	(2) Tuxedo Park, Ramapo, Suffern, Westwood, New York	49	102
	Morristown National Historical Park: (1) 42nd St. Ferry, Newark, Irvington, Chatham, Madison	34	
	(2) Return via Boonton, Paterson, Washington Bridge	51	85

WHERE TO RIDE (*Continued*)

Two-Day Trips from New York City (*Continued*)

AREA	DESTINATION	ROUTE	MILEAGE (From and to Columbus Circle) Daily Run	Total
	Lakewood:	(1) St. George Ferry, Staten Island, Perth Amboy, Freehold	58	
		(2) Lakewood, Point Pleasant, Asbury, Long Branch, Atlantic Highlands—boat from Atlantic Highlands to New York	45	103

Three-Day Trips from New York City

AREA	DESTINATION	ROUTE	MILEAGE (From and to Columbus Circle) Daily Run	Total
Hudson River Valley	Lake George:	(1) Boat to Poughkeepsie, pedal to Hudson	41	
		(2) Hudson, Albany, Saratoga	67	
		(3) Lake George and return to Albany, boat to New York	79	187
	Pittsfield, Mass.:	(1) Boat to Poughkeepsie, pedal to Canaan	45	
		(2) Canaan, Great Barrington, Pittsfield, Great Barrington	54	
		(3) Great Barrington, Hudson, Catskill, Kingston—boat	57	156
Long Island	Greenport:	(1) Jericho Pike, Smithtown, to Riverhead	87	
		(2) Riverhead, Greenport, Sag Harbor, Hampton Bays, Patchogue	79	
		(3) Patchogue to New York	65	231
New Jersey	Atlantic City:	(1) St. George Ferry, Staten Island, Lakewood, Atlantic City	122	
		(2) Atlantic City, Hammonton, Camden, Philadelphia,	68	
		(3) Philadelphia, Trenton, New York	100	290

THREE-DAY TRIPS FROM NEW YORK CITY (*Continued*)

			MILEAGE (From and to Columbus Circle)	
AREA	DESTINATION	ROUTE	Daily Run	Total
	Delaware Water Gap:	(1) Newark, Morristown, Hackettstown, Delaware Gap	92	
		(2) Water Gap, Milford, Port Jervis, Middletown	60	
		(3) Middletown, Goshen, Monroe, Suffern, Westwood, New York	77	229
	Jersey Lakes:	(1) Jersey City, Montclair, Dover, Lake Hopatcong	52	
		(2) Hopatcong, Oak Ridge, Newfoundland, Greenwood Lake	60	
		(3) Greenwood Lake, Southfields, Sloatsburg, Waldwick, New York	49	161
	Easton-Trenton:	(1) Jersey City, Newark, Plainfield, Clinton, Easton	87	
		(2) Easton, Bridgeton, Point Pleasant, Trenton	54	
		(3) Trenton, New Brunswick, Staten Island, New York	62	203
	Philadelphia:	(1) New York, Trenton, Philadelphia	90	
		(2) Riding in Fairmount Park, along the Wissahickon, etc.	50	
		(3) Philadelphia, New York	90	230

NOTE: Check mileages and route numbers from current road maps

WEEK AND TWO-WEEK TOURS

		MILEAGE	
DESTINATION	ROUTE	Daily Run	Total
Boston and Cape Cod (One Week)	(1) New York to Danbury	64	
	(2) Danbury to Hartford	61	
	(3) Hartford to Southbridge	62	
	(4) Southbridge to Boston	57	
	(5) Boston to Provincetown—via boat	..	
	(6) Provincetown to Sagamore	60	
	(7) Sagamore to Providence—night boat to New York	61	365

WHERE TO RIDE (*Continued*)

Week and Two-Week Tours (*Continued*)

DESTINATION	ROUTE	MILEAGE	
		Daily Run	Total
Bar Harbor (One Week)	(1) Boston to Portsmouth (boat to Boston)	58	
	(2) Portsmouth to Portland	51	
	(3) Portland to Waldoboro	65	
	(4) Waldoboro to Belfast	43	
	(5) Belfast to Bar Harbor	57	
	(6) Around Mt. Desert Island and Acadia National Park—boat from Bar Harbor to Boston and New York	61	335
Lake Sunapee (One Week)	(1) Boat New York to New Haven	. .	
	(2) New Haven to Springfield	64	
	(3) Springfield to Northfield	54	
	(4) Northfield to Lake Sunapee	70	
	(5) Around Lake Sunapee	30	
	(6) Sunapee to Manchester	61	
	(7) Manchester to Boston—night boat from Boston to New York	58	337
Montreal (Two Weeks)	(1) Boat from N. Y. to Albany	. .	
	(2) Albany to Arlington, Vt.	53	
	(3) Arlington to Brandon	58	
	(4) Brandon to Burlington	52	
	(5) Burlington to Rouses Point	49	
	(6) Rouses Point to Montreal	45	
	(7) Around Montreal	50	
	(8) Boat tour on St. Lawrence	. .	
	(9) Montreal to Plattsburg	68	
	(10) Plattsburg to Ticonderoga	71	
	(11) Ticonderoga to Lake George	40	
	(12) At Lake George	. .	
	(13) Lake George to Albany	59	
	(14) Boat Albany to New York	. .	545
Quebec (Ten Days)	(1) Montreal to Sorel	52	
	(2) Sorel to Ste. Angèle	51	
	(3) Ste. Angèle to Ste. Croix	51	
	(4) Ste. Croix to Levis (Quebec)	31	
	(5) Quebec-Ste. Anne de Beaupré (r.t.)	40	
	(6) Sightseeing in Quebec	. .	
	(7) Quebec to Deschambault	42	
	(8) Deschambault to Trois Rivières	41	
	(9) Trois Rivières to Berthier	46	
	(10) Berthier to Montreal	50	404

Week and Two-Week Tours (*Continued*)

DESTINATION	ROUTE	MILEAGE	
		Daily Run	Total
Niagara Falls (Two Weeks)	(1) New York to Middletown	68	
	(2) Middletown to Roscoe	51	
	(3) Roscoe to Binghamton	72	
	(4) Binghamton to Ithaca	52	
	(5) Ithaca to Watkins Glen	28	
	(6) Watkins Glen to Wayland	54	
	(7) Wayland to Batavia	57	
	(8) Batavia to Niagara Falls	46	
	(9) Sightseeing at Falls	..	
	(10) Niagara Falls to Batavia	46	
	(11) Batavia to Geneva	66	
	(12) Geneva to Cazenovia	67	
	(13) Cazenovia to Richfield Springs	48	
	(14) Richfield Springs to Albany—Albany night boat to New York	64	719
Thousand Islands and Lake Placid (Two Weeks)	(1) New York to Highland	79	
	(2) Highland to Albany	72	
	(3) Albany to Lake George	61	
	(4) Lake George to Elizabethtown	69	
	(5) Elizabethtown to Lake Placid	25	
	(6) Lake Placid to Tupper Lake	36	
	(7) Tupper Lake to Fine	52	
	(8) Fine to Alexandria Bay	59	
	(9) Cruising the Thousand Islands	..	
	(10) Alexandria Bay to Boonville	76	
	(11) Boonville to Gloversville	73	
	(12) Gloversville to Albany	43	
	(13) Day Line boat to New York	..	645
Lake George and the Berkshires (One Week)	(1) New York to Danbury	64	
	(2) Danbury to Canaan	54	
	(3) Canaan to Williamstown	54	
	(4) Williamstown to Glens Falls	61	
	(5) Glens Falls-Lake George (r.t.)	18	
	(6) Glens Falls to Albany	51	
	(7) Albany-New York—Day Line boat		302
Washington, D.C. (Two Weeks)	(1) New York to Trenton	60	
	(2) Trenton to Philadelphia	35	
	(3) In Fairmount Park-Philadelphia	20	
	(4) Philadelphia to Elkton	48	
	(5) Elkton to Baltimore	51	
	(6) Baltimore to Washington	40	
	(7–8) Sightseeing in Washington	..	
	(9) Excursion to Mt. Vernon	30	

WHERE TO RIDE (*Continued*)

Week and Two-Week Tours (*Continued*)

ROUTE	MILEAGE Daily Run	Total
(10) Washington to Annapolis	33	
(11) Annapolis to Elkton (ferry)	71	
(12) Elkton to Camden via New Castle-Pennsville ferry	49	
(13) Camden to Hightstown	45	
(14) Hightstown to New York	54	536

Chapter VIII

PLANNING A EUROPEAN CYCLE TOUR

Europe is the paradise of the bicyclist. Everybody appears to be pedaling and cycle stores are everywhere. The few motorcycles and fewer automobiles and buses really make for safe and pleasant cycling. Traffic is, of course, heavy in Paris, London, Berlin, and Rome, but cycling is seldom pleasant in cities. Some of the parks in Belgium are reserved for cyclists and equestrians. A bicycle in Europe corresponds to an automobile in the United States. You are not an object of curiosity or considered a nuisance on the road by both motorists and police. The short distances in Europe are efficiently covered awheel.

In order to enjoy a leisurely cycle trip in Europe you should allow at least five weeks; two months would be more adequate. About two weeks will be consumed by the ocean voyage. Do not attempt to cover all Europe in two months. It is better to cover one or two countries and really see and understand the people. The more borders you attempt to cross, the more difficulties and expenses you will meet. Because of proximity, topography, and language the following countries may be grouped:

I. England, Scotland, and Irish Free State
II. France and Belgium
III. Germany and the Netherlands
IV. Italy and Switzerland
V. Denmark, Norway, and Sweden
VI. Poland, Hungary, and Rumania

You may arrange your European cycle tour by using one of four methods: (1) traveling independent—and making all arrangements yourself; (2) letting Thomas Cook and Son or other commercial agency arrange a cycling tour; (3) joining a noncommercial American Youth Hostel sponsored European cycle trip; (4) joining a Mediterranean or North Cape cruise and making all side trips by bicycle. If you decide to "go it alone" you should be able to speak at least French and German to get the lower rates. You will have to secure your own tickets, passport, etc., but you will be free to stop over wherever you like, and go native. You will not be tied to a group of youngsters or old folks. You are absolutely a free agent. This is well worth thinking over. If you join a tour or commercial travel party you need not worry about accommodations, food, passports, and so on, and will have no language difficulties. It may be more pleasant to enjoy the country with others. In case of accident or sickness you will also be taken care of. Maybe the cruise is the ideal way of seeing Europe. The cruise ship is your hotel, your cycle jaunts are made at each port of call.

Approximate cost of the four methods of touring Europe (based on ten-week trip):

(1) Independent—round trip passage $200; purchase of bicycle $50; eight weeks abroad @ $10, $80; total...$330
(2) Commercially Sponsored Cycle Tour to five countries $498
(3) American Youth Hostel Sponsored Tour to five countries $311
(4) College Cycle Club Sponsored Mediterranean Tour on S.S. *Roma*, eight weeks, fourteen countries......$285
(Noncommercial—cost of bicycle not included)

Bicycles may be purchased in Europe at about half the price on similar quality in the United States. Repair shops are found everywhere; therefore, extra tires and small parts need not be carried. If you decide to take your wheel abroad you must pay an extra $5 transportation charge. Low rates are in effect for shipping a bicycle by train in Europe. You will require a passport, to be secured from the Department of State at Washington. Your next step should be to join one of the following:

CYCLISTS' TOURING CLUB (C.T.C.)

3 Craven Hill,
London W.2
England
(membership 11 shillings)

NATIONAL CYCLISTS' UNION (N.C.U.)

35 Doughty Street
London W.C.1
England
(membership 6 shillings 6 pence)

Either of these clubs issues a foreign touring card and travel information which will save you endless trouble if planning a Continental tour. In some countries, such as France, you must secure a permit to pedal, which costs about 25 cents. What to take along and what to wear has already been covered. Shorts are not popular on the Continent for women.

This is not a guidebook. Areas will be suggested for appropriate tours, without attempt at details. Guidebooks and maps may be secured through the national touring organizations of the various countries. You may also secure insurance through the touring club. Your American Youth Hostel pass with a foreign travel sticker, costing 25 cents, will admit you to 5,000 hostels in 18 European countries. However, certain European countries limit hosteling to youth below certain ages: Switzerland, 25 years; France, 30 in some areas; Belgium 35 in the Vlaamse association. All European youth hostels make about the same charges and regulations. Bicycles taken into France, Italy, and Switzerland are subject to a customs duty which is waived by putting down a deposit of from $5 to $10, which will be returned in full when you leave the country. A member of a bicycle club can cross borders without paying a deposit. You should, therefore, join a club.

Parties of ten or more obtain reductions on trains and boats. Cyclists should plan about 50 miles as a day's run. A week in Scotland or Germany costs from $20 to $25. The touring season is from May to September.

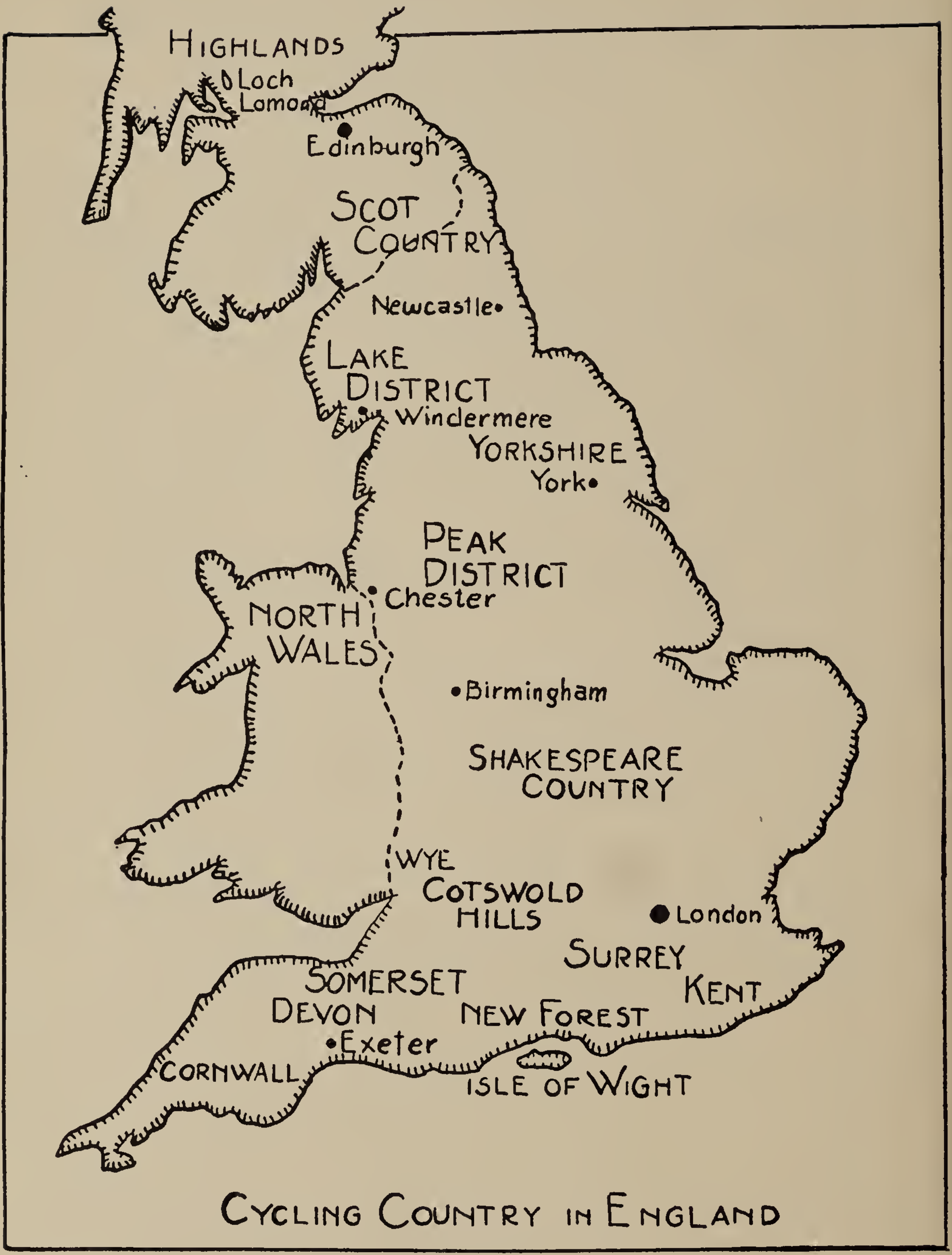
Third class is usual on rail journeys in England and on the Continent. Inoculation against smallpox and typhoid is advisable if going to southeastern Europe.

OUTLINE TOURS

ENGLAND

Rules of the road prescribe that you "Keep to the Left."

1. *Lake District* Start: Windermere
Coniston, Eskdale, St. Bees, Keswick, Ullswater, Ambleside, Grasmere, Troutbeck 5 days—176 miles
2. *Yorkshire Dales and Coast* Start: York
Malham, Askrigg, Barnard Castle, Asenby, Saltburn, Whitby, Scarborough, York 8 days—351 miles
3. *North Wales* Start: Chester
Abergele, Llandudno, Llanberis, Ffestiniog, Plas Rhiwaedog, Chester 7 days—249 miles
4. *Central Wales* Start: Birmingham
Ludlow, Erwood, Ponderwyd, Taliesin, Plas Rhiwaedog, Shrewsbury, Birmingham 7 days—330 miles
5. *Shakespeareland, Cotswolds, Wye, and Thames* Start: London
Ivinghoe, Warwick, Stratford, Stow-on-the-Wold, Welsh Bicknor, Chepstow, Forest of Dean, Witcombe, Northleach, Oxford, Henley, Windsor, London 12 days—429 miles
6. *New Forest and Hardy Country* Start: London
St. Mary, Winchester, Burley, New Forest, Cerne-Abbas, Salisbury, Farnham, London 8 days—330 miles
7. *Devon and Cornwall* Start: Exeter
Week, Gara Mill, Plymouth, Boswinger, Kennack Sands, Lelant, Port Quin, Clovelly, Brendon, Minehead, Bampton, Exeter 12 days—374 miles



CYCLING COUNTRY IN ENGLAND

SCOTLAND

1. *Borders, Trossachs, and Galloway* Start: Newcastle
Ferniehirst Castle, Edinburgh, Creag Dhu, Ardgartan, Troon, Loch Lomond, Kendoon, Hoddom Castle, Carlisle, Newcastle 8 days—447 miles
2. *Edinburgh, Trossachs, and Loch Lomond* Start: Edinburgh
Creag Dhu, Comrie, Kindrochit, Dalmally, Inverbeg, Ardgartan, Fintry, Edinburgh 8 days—359 miles
3. *Central Scotland* Start: Edinburgh
Creag Dhu, Comrie, Kirkmichael, Ballater, Aviemore, Cairngorm, Glen Nevis, Ben Nevis, Dalmally, Ardgartan, Loch Lomond, Fintry, Edinburgh 13 days—486 miles
4. *Central and Western Highlands* Start: Edinburgh
As tour above to Aviemore, Buntait, Ullapool, Carn Dearg, Achnashellach, Ratagan, Glen Garry, Glen Nevis, continue above 18 days—792 miles

IRELAND

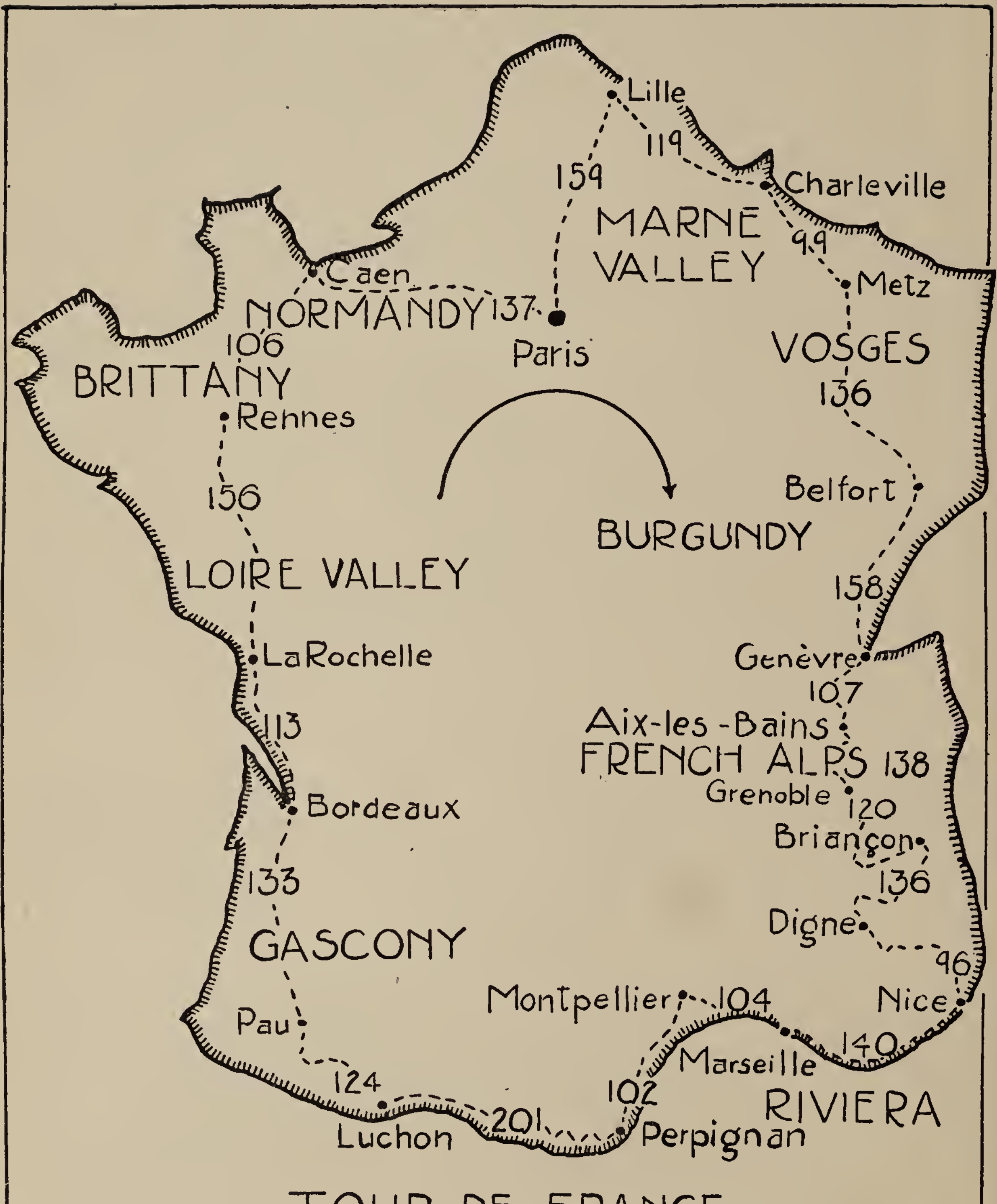
1. *Central Ireland* Start: Dublin
Glendalough, Ballinclea, Avoca, Knockree, Mellifont, Boyne Valley, Dublin 7 days—205 miles

FRANCE

The classic 3,050-mile "Tour de France" is too long and difficult for the average American cycle tourist with a limited time. This annual event is the French "world series." A detailed account of the mileages and stopover points is given in the Appendix. Touring information may be secured from:

Touring Club de France
65 Avenue de la Grande-Armée
Paris

French Youth Hostel Association
15 Rue de Valois
Paris



TOUR DE FRANCE
Numbers = Miles

TOUR DE FRANCE

	Kilometers	Miles
1. Paris–Lille	258	159.9
2. Lille–Charleville	192	119.0
3. Charleville–Metz	161	99.8
4. Metz–Belfort	220	136.4
5. Belfort–Genèvre	256	158.7
6. Genèvre–Aix-les-Bains	173	107.2
7. Aix-les-Bains–Grenoble	224	138.8
8. Grenoble–Briançon	194	120.2
9. Briançon–Digne	220	136.4
10. Digne–Nice	156	96.7
11. Nice–Marseille	227	140.7
12. Marseille–Montpellier	168	104.1
13. Montpellier–Perpignan	166	102.9
14. Perpignan–Luchon	325	201.5
15. Luchon–Pau	200	124.0
16. Pau–Bordeaux	215	133.3
17. Bordeaux–La Rochelle	183	113.4
18. La Rochelle–Rennes	252	156.2
19. Rennes–Caen	171	106.0
20. Caen–Paris	221	137.0
Totals	4,182	2,592.2

Taken from Carte Officielle—L'Auto, Paris

The Michelin Tire Company publishes good regional guides in French for road users. A red rear lamp and a bell are compulsory. It is well to learn the international road signs. The rule of the road is to keep to the right. A phrase book or pocket dictionary will be helpful. In entering upon a main road it is important to note that those traveling on main roads always have precedence.

1. *Northern France* Start: Boulogne
   Montreuil, Aumale, Berneuil, Paris, Giverny, Rouen, Dieppe, Le Havre
   8 days—332 miles
2. *Paris and Normandy* Start: Dieppe
   Rouen, Giverny, Paris, Versailles, LeGui, La Haye-Malherbe, Trouville
   8 days—333 miles
3. *Châteaux of the Loire* Start: Dieppe
   Rouen, Giverny, Paris, Boissy-La-Rivière, Orléans, Dreux, Orléans, Blois, Tours, Saumur, Le Mans, Carrouges, Trouville, Honfleur, Le Havre
   12 days—610 miles
4. *Brittany* Start: St. Malo
   Paimpol, Vannes, Lorient, L'Abbe, Brest, Morlaix, Saint-Brieuc, Lannion, St. Malo
   8 days—409 miles
5. *Vosges* Start: Sarrebourg
   (Train Calais to Sarrebourg 330 miles)
   Le Donon, Le Metairie, Sainte-Marie-aux-Mines, Metzeral, Neuweiher, Colmar, Sarrebourg or Strasbourg (return via train)
   7 days—277 miles
6. *French Alps* Start: Bonneville
   (Train Calais to Bonneville 590 miles)
   Chamonix, Mont Blanc excursions, Venthon, Courchevel, Chamousset, Chindrieux, Ayze-Bonneville
   9 days—228 miles

BELGIUM

The Touring Club de Belgique, 44 Rue de la Loi, Brussels, publishes a special cycle map showing paths to be used.

1. *Ardennes and Liége* Start: Antwerp

Brussels, Burnot, Bouillon, Rochefort, Angleur, Liége, Antwerp 8 days—318 miles

THE NETHERLANDS

The Nederland Official Tourist Office at 630 Fifth Avenue, New York, issues an excellent map and book for cyclists, *Motoring in Holland*. No deposit is required in Holland but a license must be obtained (free) from the customs officer on entering. Cyclists keep to the right.

1. *Tour of Holland* Start: Flushing

Bergen Op Zoom, Rotterdam, Scheveningen, Amsterdam, Oosterland, Sneek, Oldebroek, Arnhem, Vught, Bergen Op Zoom, Flushing, Utrecht, Rotterdam 10 days—505 miles

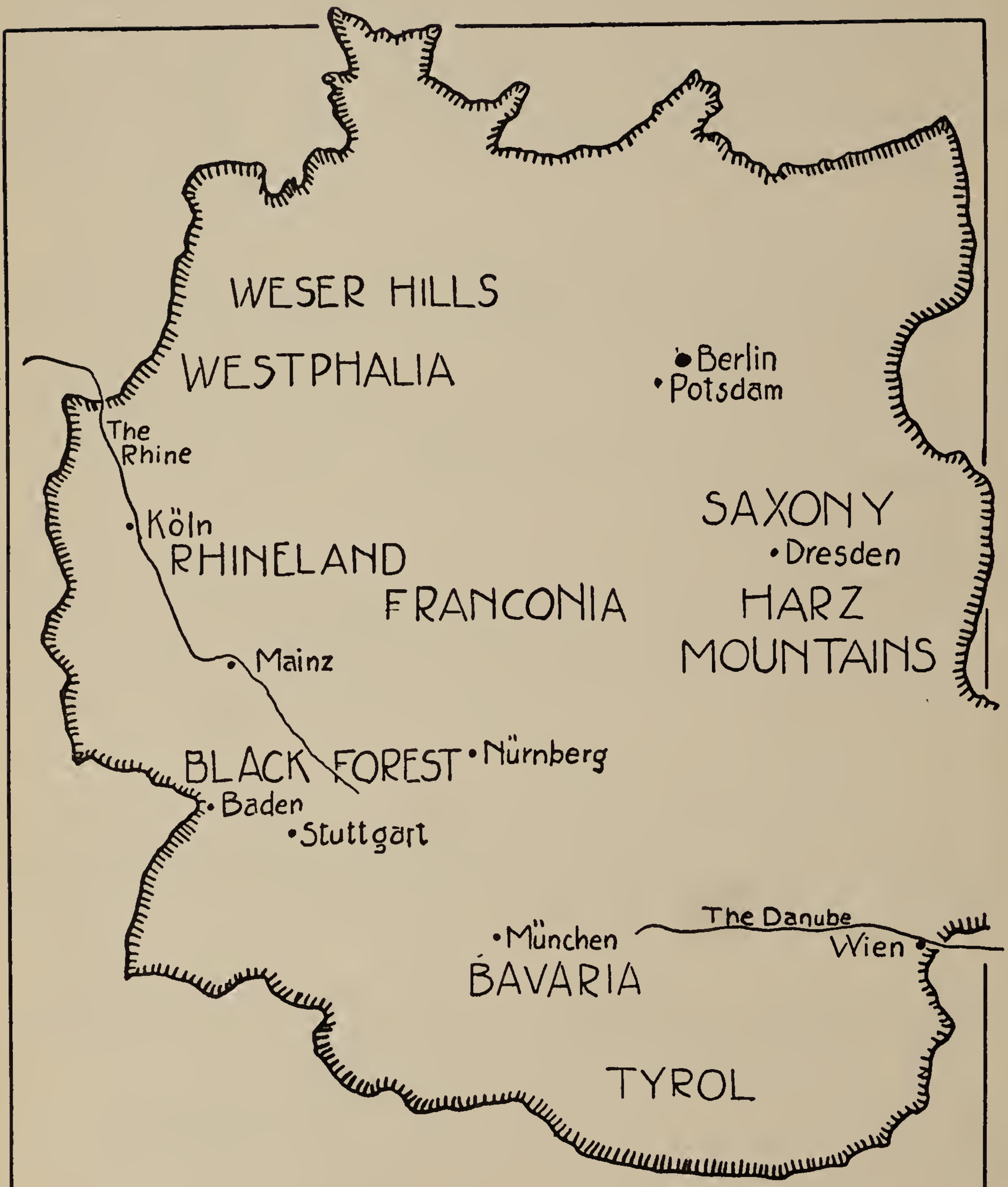
GERMANY

Bicycles are admitted free for a holiday tour. The rule of the road is "Keep to the Right." Information for cycle touring may be secured from:

German Cyclists Association
(Deutscher Radfahrerverband)
203 Kurfürstendamm
Berlin W 15

German Youth Hostel Association
(Reichsverband für Deutsche Jugendherbergen)
40 Klopstockstrasse
Berlin N.W. 87

The German Youth Hostel Association has nearly 2,000 hostels, generally large and equipped with cooking facilities.



CYCLING COUNTRY IN GERMANY

The *D.J.H. Handbook* gives complete information for the hosteling cyclist.

1. *The Rhineland* Start: Antwerp

Brussels, Seilles, Rochefort, Steinfort, Trier, Trarbach, Brodenbach, Bacharach, Koblenz, Köln, Aachen, Liége, Angleur, Antwerp 12 days—594 miles

2. *The Rhineland* (Alternate) Start: Liége

(to Liége by train) Malmedy, Hellenthal, Trier, Bingen, Bacharach, Godesberg, Köln (train to Liége) 7 days—253 miles

3. *The Harz Mountains and Berlin* Start: Antwerp

Eindhoven, Xanten, Münster, Stadtoldendorf, Goslar, Harz Mountains, Thale, Dessau, Berlin, Burg, Braunschweig, Barsinghausen, Bad Essen, Gronau, Arnheim, Eindhoven, Antwerp 18 days—930 miles

4. *The Black Forest* Start: Baden

Kniebis, Schonwald, Feldberg, Sackingen, Schauinsland, Oberwolfach, Baden 7 days—324 miles

5. *Bavarian Alps* Start: Munich

Uffing, Schwangau, Garmisch-Partenkirchen (scene of 1936 Winter Olympics) Lenggries, Josefstal, Traunstein, Berchtesgaden, Traunstein, Munich 8 days—418 miles

ITALY

Italy has no youth hostel organization as yet. Maps and touring information may be had from the Touring Club Italiano, Corso Italia 10, Milano. Italy offers ideal cycling areas:

1. Italian Riviera from Ventimiglia to Genova

2. Italian Lake District with boat connections from Lugano, to Como to Maggiore
3. Islands such as Sicily and Rodi offer beautiful shore paths.

DENMARK

No duty on used bicycles for holiday tours. The absence of hills makes Denmark a cyclists' country. Cyclists keep to the right. There are six times as many bicycles as automobiles in Denmark.

Tour of Denmark Start: Esbjerg

Tonder, Sonderborg, Middelfahrt, Tulstrup, Vejle, Esbjerg
7 days—317 miles

OTHER COUNTRIES

Cycling with youth hostel accommodations is feasible in Luxembourg, Norway, Finland, Switzerland, Sweden, Poland, Rumania, Danzig, Latvia, Lithuania, Estonia, Algeria, Tunisia, and Morocco.

Chapter IX

PREPARING FOR RACING

Bicycle racing has developed the sport and has aroused public interest. Fair competition makes for good sportsmanship. Racing usually appeals to youth. Most people enjoy watching keen competition in any sport, especially cycling with its spills. The Six-Day Race in Madison Square Garden attracts more spectators than any other single sport. Newspapers are looking for competitive sport news, whereas touring information and club trips are seldom published.

If you are over eighteen years of age, have plenty of energy, enjoy fast riding, competition, and have an ambition to become a champion, then plan for a career in cycle racing. If you possess stamina and endurance, long-distance riding may appeal to you. There are many distance records to be equaled or broken and you may also qualify for the 62.135-mile Olympic classic. After you have won some road racing competitions, you may decide to start your track racing career. Most professional riders have been recruited from the amateur championship ranks. If you wish to remain an amateur consider this definition:

> An amateur athlete is one who does not enter in an open

competition for a stake, public money or admission money or entrance fee, or compete with or against a professional for any prize; or has never taught, pursued or assisted in the pursuit of exercise as a means of livelihood.

Before entering any race make sure that you are physically fit for the severe exertion to come. A thorough medical examination is most advisable. It is also well to join a racing club before entering competition. Your clubmates may give you much practical information. Wearing your club colors in open competition may give you a feeling of prestige that you will lack as an unattached rider. In a team race you have the advantage of working with your fellow club members.

Your medium-weight touring bicycle will not be practicable for fast road racing. There are no regulations as to the type of wheel that must be used. A lightweight road racing model, with light rims and narrow rubber tires (silk tires for track racing) and minus all gadgets is desirable. (If possible have a special bicycle built to fit you.) The machine must be kept in good condition, well oiled, wheels running true, chain pliable, and the tires at proper pressure. Racing gears are a matter of choice. Variable gears are used for cross-country record riding. Wear your club uniform or comfortable, cool, lightweight attire.

Begin training for the race several weeks in advance. There are two objects in training: to produce perfect health and to develop special powers in individual organs. You may go in training by yourself or hire a professional to train you for the important event. A trainer will probably note your daily weight, select a track or course, ride with you, give you a rubdown after the training period, and check your position, style, and running time.

No hard and fast rules can be set as to the correct method of training for a championship. The general common-sense rules of correct living apply. Here are some practical hints:

I. Training Diets: According to Coach Cromwell of the University of Southern California, speed and endurance call for diets high in carbohydrates, low in fat, and rich in alkaline, mineral foods. The chief sources of carbohydrate are the cereals, breads, fruits, vegetables, sugar, syrup, honey, jams, jellies, and plain candies. The chief sources of fat are rich milk, butter, cream, ice cream, cheese, fat meat, gravies, bacon, lard, suet, nuts, egg yolk, olive and vegetable oils. The chief sources of protein are skim milk, cottage cheese, lean meat, fish, fowl, eggs, and beans. Alcoholic stimulants and tobacco are not to be used. An athlete should eat a substantial breakfast and a light lunch, and an even lighter one before a race. A good substantial dinner at night after practice or after a game may be enjoyed. Do not eat between meals. If a man becomes fat he becomes slow, lacks endurance, and lags behind in competition. Do not eat heavy or indigestible foods. You know best which foods are indigestible to you.

II. Sleep: Keep regular hours for work, meals, and training. The United States Army requires eight hours of sleep for its soldiers. You should obtain eight hours' sleep, and several of these hours before midnight.

III. Workout: The exercise should be progressive. Do not go out for training if you feel at all weak. Training should be building up, not exhausting. The kind and amount of training you will indulge in will depend upon the length of the race. For short-distance training, a workout once or twice a week with sprints at ¼, ½, and 1 mile should be sufficient. Usually a group of club riders will take their workout together. For long-distance competitions a 25- or 50-mile workout is required. Let someone time you for each workout. Practice on the race ground or track if possible.

IV. Rubbing: A warm bath or shower is necessary after the training period. Hand rubbing with a rough towel will stimulate you. The worth of a professional trainer may be gauged by the amount of hand rubbing he gives you.

V. Starting: Get a strong friend to aid you. Get your pedal in position so that power can be applied at once. Your pusher-off steadies the machine while you adjust your toe-clip straps; then a strong steady shove should be given. Practice this until you are in unison with your pusher-off. Be ready to push off instantly with a given signal.

VI. Finishing: Many races are won, lost, or thrown away at the tape. Always make it a rule to finish up five yards beyond the post. In practice always finish past the post at top speed. The wearing of a brightly colored jersey will help to distinguish you in a close finish.

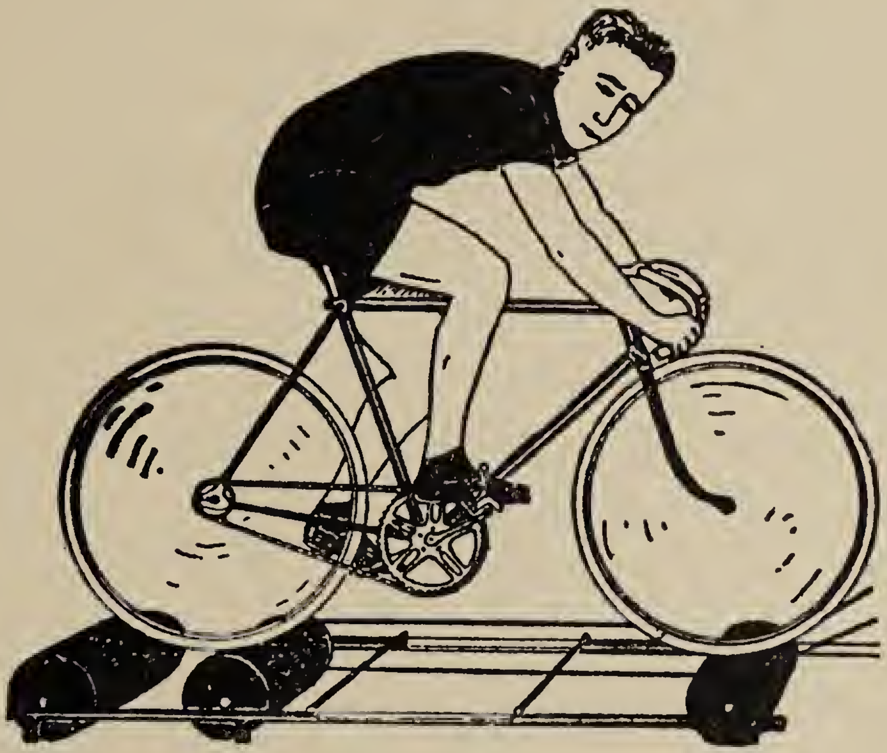
VII. Avoiding Accidents: In taking pace be sure that your front wheel is outside the hind wheel of the pacemaker so that if he suddenly slows, you may have room to turn out and avoid a collision. Avoid even the mere touching of another's wheel. Wear a crash helmet.

Be prepared on the day of the race. You should have taken a complete rest from cycling on the preceding day. Be at the appointed place an hour or more ahead of schedule. Bring your friend to assist in giving you a rubdown. Secure your competitor's number and present yourself to the proper official. Have a light meal three hours before the race. Examine your bicycle and adjust it if necessary. If you are cool, do not stand about in racing costume but cover yourself with a robe. Note the call to the mark and be there with your wheel. (Positions on a track are usually decided by a chance system of drawing lots.) Mount and have your pusher-off ready for the starting shot. While in the race avoid getting into "pockets" where you are surrounded by competitors and unable to get ahead. In a long race you will find an advantage in sticking just behind a man going at about your pace or a little faster. Reserve your real effort for the final spurt. If there are heats, rest, when possible, by lying full length on your back. After the race is over, change your clothes, and sit rather than stand about.

For track racing you will require a different technique than for the road. Your bicycle should have special cranks, tires, gears, and be without brakes. Your costume will be even more professional in appearance. The absence of hills and rough roads will make the riding more even. The large number of spectators will also have a definite influence on your riding. Your competitors will be experienced riders and you will learn much in this new type of saucer riding. Great speed will be attained by your high gears. More valuable prizes will be awarded. For amateur motor-paced racing a specially built front wheel is required. This demands the utmost in practice by both motorcyclist and bicyclist to keep a pace suitable to the pusher. The motorcyclist will make use of devices to enable the paced rider to obtain as much wind resistance as possible. Speeds up to 60 miles an hour may be reached in motor-paced races. There are many motor-pace fans today.

By means of "home trainers" an active cyclist is not hindered from exercising during the winter months when outdoor road riding is dangerous. Home trainers are of two types. The first type is a stand on which a bicycle can be placed and held firmly in position, so that the rider can mount and practice pedaling while remaining stationary. The driving wheel is allowed to revolve on a small metal roller.

The second type of home trainer is known as the "roller." This consists of three large wooden rollers mounted on a stand. Your bicycle is placed thereon without any changes. The back wheel rests between two wooden rollers and the front on one wooden roller. It is rather difficult to mount without help. Once on and going, you pedal away at any speed, always being careful to remain within the length of the roller or you will be quickly thrown off. Sometimes two rollers are mounted side by side, with a two-handed clock arrangement in front of the riders. These two hands record the revolutions made by each rider and are used for roller racing. The rollers are heavy and suitable for the basement of the cycle club or a gymnasium. Many



A Home Trainer

Sometimes called "Rollers," this affords a method of keeping in condition during the period when outside riding is impossible.

clubs conduct roller races during the winter and records have been established. The great value of the rollers is that the riders are able to keep in excellent condition during the winter season. The novice will find himself pedaling with ease and rapidity with a tendency to keep up the speed, with the inevitable result that in a few minutes he is completely exhausted by the rapidity of the action.

At the Olympic Games in the Rose Bowl at Pasadena, California, in 1932 tandem racing was a popular event. This machine for two is built longer and stronger. The spokes, hubs, and tires are slightly heavier. While the touring tandem has a lady back, the racing tandem is of double-diamond frame construction. It weighs about 40 pounds. Two good riders can get great speed out of it on a track. It is hard to get started and requires much energy in pushing uphill. A tandem team needs practice in pushing and pulling together.

Probably the most spectacular bicycle race of all time was the feat performed by Charles M. (Mile-a-Minute) Murphy back on June 30, 1899. Before this time the record for a mile on a bicycle was 3 minutes and 19 seconds. Mr. Murphy stated that he could follow a railroad train at least two minutes faster than the existing record. A Long Island Railroad official decided to give Murphy a try. A special car was constructed which looked like an enormous vestibule to shield from the rush of air displaced by the locomotive. The principle was that the fast-moving locomotive would expel the air to such an extent that the rider could follow in the vacuum behind. The run was held on a level three-mile stretch near Maywood, Long Island. Murphy made two attempts and on the second he established the remarkable time of 57 4/5 seconds for the mile.

Mr. Murphy is now a retired policeman living in Flushing, Long Island. He is sixty-eight years old and still an active cyclist. In his best year, 1895, he held seven world records, seventeen American records, and twenty-nine state records. He is still interested in cycling and has advocated a special cycle path from New York City to Belmont Park.

A famous old-timer who recently passed away was Arthur A. Zimmerman. He started his career in 1887 on the old high wheel and won over 1,400 races all over the world. Other well known cyclists include Major Taylor, Frank L. Kramer, Reggie McNamara, Alf. Goullet, Robert Walthour and Norman Hill.

HOW TO ORGANIZE AN AMATEUR ROAD RACE

1. Be sponsored by a recognized club, headed by responsible experienced officers.
2. Obtain the sanction of the local and/or national amateur racing board or controlling body.
3. Course to be selected should be level, smooth, and hard-surfaced, with a minimum of traffic and congestion and a finish somewhere close to the start. Course must be accurately measured.

4. Date of the race should be a Saturday, Sunday, or holiday.
5. Experienced officials should be selected mainly from the sponsoring club, with judges from all amateur clubs likely to send entries. Officials should consist of a race committee headed by a chairman, starters, judges (uneven number), checkers, clerks, referee, timers, and a physician. There must be no complimentary positions.
6. Selection of events should include three groups: juniors, girls, and seniors. Distances should be based upon the national championship events of ½ mile, 1 mile, 2 miles, 5 miles, 10 miles, and 25 miles (shorter distances for girls and juniors).
7. Entry blanks to contain all information, rain date, and a detachable waiver for accident liability, which will also serve as an entry blank. Prohibitions and prizes should also be listed.
8. Entry blanks to be printed and distributed to all club secretaries, cycle dealers, newspapers, magazines, chambers of commerce, etc., at least a month before the date for the event.
9. A small fee should be charged to cover expenses and prizes.
10. All officials should be instructed as to the nature and extent of their duties; paper and pencil distributed to each one. Handicaps should be decided upon when entries are received.

11. Events should be arranged so that each competitor has ample breathing space between heats.
12. On the day of the race, a loud-speaker mounted on an automobile will be a great help. Keep the program moving.
13. A permit should also have been secured from the local police station and a request for a police car or a few motorcycle police at the race course.
14. Starting and finishing points should be indicated with heavy white lines across the road.
15. On receipt of the entry form with fee, the competitor should be sent a postcard bearing his number to serve as an acknowledgment and an admission pass within the police lines.
16. Badges should be distributed to officials at the race course and cloth numbers to the competitors.
17. To keep the event within amateur limits no cash prizes should be given. It may be possible to give merchandise certificates to be redeemed at local stores.
18. The program for the race day should list the events, names, numbers, and clubs of competitors. Judges and officials should also be listed. Road racing rules should be given for the information of spectators. A brief story may be given of champions who are entered. The rest of the program should be filled with advertisements. Confine advertisements to left-hand pages.

19. A membership application blank to the sponsor club might be slipped into the program.
20. After the race has been successfully concluded, letters should be mailed thanking the officials, police, park department, and others for their helpful cooperation. Prizes may be awarded at the next club meeting or at a dance conducted by the club.

Chapter X

PLANNING CYCLE PARADES, CENTURY RUN, AND CARNIVALS

After your bicycle club has been organized and is running smoothly, a century run, parade, and carnival might be sponsored. Such events will greatly stimulate the sport, may bring extra revenues to the treasury, will add to club prestige, and give much pleasure and enjoyment to those taking part.

Plans for cycling events should be made months in advance, with details carefully worked out. Some of the important details will include such matters as these:

1. Permit from police departments to hold parade, carnival events, etc.
2. Events to be held and time allotment for each.
3. Committee to handicap racing events and method of handicapping.
4. Sanction to be obtained from state or national governing body; otherwise all contestants will be barred from further competition.
5. Date to be selected not to conflict with other important events.
6. Time, date, and place to be convenient for most riders who would probably attend.

7. Club committee to select pacemakers, starters, judges, referee, timers, scorers, clerk of course, checkers along route, camera and publicity men.
8. Rain date, usually the next Sunday or Saturday.
9. Amount of entry fee to cover costs and a little more if possible.
10. Decision as to any limitations on costume and types of wheels.
11. Committee to secure prizes, usually awarded by cycle dealers, public officials, community groups, manufacturers, or clubs.
12. Selection of honorary officers for the events, such as city, state, and national leaders interested in the sport.
13. Route of parade avoiding heavy traffic as much as possible, to be worked out with the various police departments.
14. Selection of design of medals, cups, prizes.
15. Time and place of awarding medals and prizes.
16. Printing and distribution of entry blanks.
17. Advertising of events in newspapers, magazines, to clubs and riders by means of letters, folders, and posters.
18. Club appropriation to cover initial expenses in connection with the event.
19. Selection of club member (or members, but not more than two) to receive entry fees and account for all moneys received. A responsible member

should be selected according to his position in the community.

20. Ambulance or medical service should be provided for at place of events.
21. Amateur events limited to amateurs only.
22. If professional talent is secured, permission must have been obtained, the event should be advertised as professional, and limited to professionals.
23. Group entries from other clubs to be submitted together and certified as amateur by a responsible club officer.
24. Waiver of right to hold club and/or officials responsible for personal injuries, damage, or loss of property, to be part of the entry blank and signed by each contestant.
25. Course should be carefully measured in advance and marked so that any records made will be officially acceptable.
26. White paint to mark line of start and finish.
27. Still and motion-picture cameras to photograph finishes to be submitted as evidence in all cases of dispute.
28. Decision of judges, selected from various clubs, to be final.
29. All matters of unfair competition to be submitted in writing to any of the judges, within a limited time after the event.
30. Local police to keep spectators in proper places along courses.

To ride a century (100 miles within 12 hours) is the goal of most novice road riders. Club century runs are usually held in early spring and late fall. They prepare you for the cycling season and climax the riding year. Almost any rider can finish in the allotted time with a few weeks' training. A few 50- or 60-mile runs will be adequate preparation.

The club promoting the century run should carefully consider a circular level route, as free from automobile traffic as possible. A variety of scenery will make the ride more enjoyable. Convenient starting points and a schedule to bring the groups back before dark is advisable. A good, wholesome, low-priced dinner should be planned in advance by the committee in charge of the run. The 10-minute stops en route should be planned at hotels catering to wheelmen (approved League of American Wheelmen inns) where available. A stop about every 10 or 15 miles will afford a sufficient rest to the pleasure riders. All riders should be warned to ride in double column behind the pacemakers. Riders sprawled all over the road or in fan-shaped formation are guilty of a traffic violation and present a great danger to themselves and motorists. A cameraman should be on the run or at interesting points along the route. Pictures afford pleasant recollections and good newspaper advertising for cycling. Club members should be asked to wear official uniforms and ride together, which presents a neat and gay appearance. Pacemakers should be given sashes with the colors of the club sponsoring the run. This will serve to identify them to both riders and spectators. At the end of the run medals are usually presented to all completing within the allotted time. A silver loving cup is sometimes awarded to the club (excluding the organizing club) having the most riders in uniform in proper formation.

Several years ago a well-known New York club conducted its annual fall century run on Columbus Day using this schedule:

		PLEASURE DIVISION 12 miles per hour		FAST DIVISION 18 miles per hour	
MILES	SCHEDULE	*Arrive*	*Leave*	*Arrive*	*Leave*
0	Bedford Rest and Columbus Circle	Start	7.00 A.M.	Start	8 30 A.M.
9	Jamaica	7.45 A.M.	7.55		9.05
17	Valley Stream	8.35	8.45		9.35
24	Freeport	9.20	9.30	10.00 A.M.	10.25
33	Amityville	10.15	10.25		11.00
43	Bayshore		11.15		11.37
47	East Islip		11.35		11.50
51	Bayshore (dinner stop)	11.55	1.00 P.M.	12.05	1.00 P.M.
61	Amityville	1.50	2.00		1.35
76	Hempstead	3.15	3.30	2.25	2.55
91	Jamaica	4.45	5.00		3.45
100	Bedford Rest and Columbus Circle	5.45	Finish	4.15	Finish

The entry fee for this run was 50 cents. To those finishing with the group a silver medal was awarded upon payment of $1. There were about a hundred participants representing most of the metropolitan cycle clubs. The pleasure division would usually try to, and often did, return to the starting point at about the same time as the fast division. Bedford Rest was located at

Eastern Parkway and Bedford Avenue, Brooklyn; Columbus Circle at 59th Street and 8th Avenue, Manhattan. Novices and those riding heavy wheels would enroll in the pleasure division, while the fast division consisted mainly of experienced club riders wearing their club jerseys, riding light foreign racing wheels with 1-inch tires. Capable long-distance riders would sometimes ride a double century, or 200 miles, within the 24-hour limit. Credit for riding this distance would require evidence in the form of official club blanks, signed about every 20 miles (with the cyclometer reading) by businessmen (residing) at the stopping places.

According to the New York *Herald* of September 23, 1894, a century run was conducted by the Westchester Cycling League. About 110 riders, including three women, from various clubs started; 80 of them survived. Some of the well-known clubs participating were: King's Bridge Wheelmen, Manhattan Bicycle Club, Star Cycle Club of Dobbs Ferry, Huguenot Wheelmen of New Rochelle, Mount Vernon Club Wheelmen, Washington Wheelmen, Young Men's Institute Wheelmen, and Atlanta Wheelmen. The mileage, route, and times follow:

MILES		SCHEDULE TIME FOR LEAVING	ACTUAL RUNNING TIME
–	Yonkers	4.30	4.55
4	King's Bridge	5.00	5.15
4	Washington Bridge	5.25	5.40
4	108th Street and Boulevard	5.50	6.05
6	East 23rd Street Ferry	6.30	6.40

MILES		SCHEDULE TIME FOR LEAVING	ACTUAL RUNNING TIME
3	Eastern Parkway	7.15	7.15
9	Jamaica	8.10	8.00
9	Rockville Center	9.15	9.07
9	Seaford	10.05	9.50
4	Amityville	10.40	10.37
5	Farmingdale	11.05	11.00
5	Hicksville	11.35	11.35
	Returning		
–	Hicksville	1.00	1.08
2	Jericho	1.15	1.18
6	Brick Tavern	1.50	1.52
6	Queens	2.35	2.35
3	Jamaica	3.00	2.55
5	Flushing	3.45	3.47
6	Astoria	4.35	4.26
4	Macombs Dam Bridge	5.20	—
5	King's Bridge	5.55	5.48
4	Yonkers—Getty Square (Arrive)	6.20	6.15

Somewhat similar to the century run is the bicycle parade. One of the aims of a parade is to arouse public interest in some event (like the New York World's Fair of 1939), or for the establishment or the continuance of cycle paths (Ocean Parkway in Brooklyn), or to advertise a Deanna Durbin cycling motion picture, or for the general good and development of wheeling. The parade must be planned, and some important details include the planning of the route (level), avoiding heavy traffic and business districts, advertising of the event, securing of police permits and protection (police car or motorcycle patrol), awarding of prizes for best uniforms worn by club riders, fancy dress, and best decorated wheels. The parade should be free and open to all riders. If possible, there should be a rehearsal. The number of riders that will make up a row will depend in part on the width of street or road and space allotted to wheelmen in the event and on riding ability. It is probably best to divide the cyclists into divisions: (1) officials; (2) club sponsoring parade; (3) other clubs; (4) veteran riders; (5) tandems, high wheels, triplets, unicycles; (6) fancy-dress riders and decorated bicycles; (7) adult riders; (8) children; (9) police escort on bicycles if possible. The distance should not be long, maybe 5 or 10 miles, because it is difficult to ride in formation and there will be many novices and others riding unicycles and high wheels. It is also well to end the parade in a large area or park where friends may pick up the riders in cars or at least meet the groups. There will be less traffic confusion if the riders return home in small groups.

The bicycle section of the New York World's Fair parade in the spring of 1938 was outstanding. All the riders wore a jersey with World's Fair colors and beret to match. Several women riders participated. The newspapers featured this part of the parade.

The bicycle carnival is the occasion for a delightful cycling festivity with many different events. It may be sponsored by a club, park, or community. It should be part of the recreational activity of parks and playgrounds. If possible, the events should be free of charge to both contestants and spectators; if it is necessary to cover expenses, a fee of 25 or 50 cents may be charged. The carnival might be preceded by a parade to arouse

THE BICYCLE CLUB SPONSORS A GAY NINETIES PARTY IN CENTRAL PARK, 1939

greater interest. A park outside the city with a cinder, dirt, or board track will serve well. Some years ago a successful carnival was held in Crotona Park, in the Bronx, by one of the leading bicycle clubs. It is hoped that the New York Department of Parks will sponsor a cycling carnival this summer.

The carnival requires careful planning several weeks in advance. Important matters to be considered are:

(1) Sponsor: a club, park department, or group of dealers.
(2) Suitable park with track and seating space for spectators.
(3) Police permit and protection.
(4) List of events, judging, awards and prizes, handicapping.
(5) Responsibility for accidents, damage to property, etc.

The College Cycle Club of New York has submitted the following carnival program to the Department of Parks:

1. Grand march and salute to the colors ("Star-Spangled Banner").
2. Prizes and honorable mention for best costumes and decorated wheels.
3. Trial heats for one-mile races for men, women, and children (under 16).
4. Exhibition of unicycle riding.
5. Tandem races, for men, couples, and women.

6. Exhibition high-wheel race.
7. Trial heats for half-mile races for all classes.
8. Trick riding by professionals.
9. Veteran riders of yesterday introduced to the audience.
10. Finals for the one-mile race.
11. Exhibition of riding by children under 7 years of age in costume.
12. Special quarter-mile race for women.
13. Beauty contest parade for women, judged by form, riding, and general appearance.
14. Finals for half-mile race for all classes.
15. A bicycle polo game between members of two bicycle clubs.
16. A bicycle potato race.
17. Five-mile open race.
18. A half-mile slow race (last one over finish line is declared the winner).
19. Men's Australian pursuit race.
20. Obstacle race for men.
21. Obstacle race for women.
22. Club riding exhibition (four abreast holding each other's handle bars).
23. Couple race with girl on handle bars.
24. Two-man team race.
25. Exhibition of old-fashioned wheels with riders in costumes of the period in which that type of wheel was used.
26. Wheel assembly race (front wheel taken out of

each bicycle, rider to claim wheel, assemble, and ride one lap).

27. Walk-cycle race (teams of two, one person to walk a lap, who then touches off his fellow rider who finishes awheel).
28. Two-mile open race.
29. Half-mile race for high- and prep-school boys.
30. Half-mile race for high-school and seminary girls.
31. City or state champion to race one mile against time.
32. Bicycle delivery carrier race (three-wheel).
33. Western Union Messenger Boys' Bicycle Race at one mile.
34. One-mile special for college undergraduates.
35. Grand Finale—All riders in group formation for picture and salute.

One of the problems of the carnival or race committee is to obtain medals, prizes, awards, and so on. It is a good plan to have the entry and admission fees cover these expenses. However, it may be possible that the dealers, bicycle manufacturers, merchants' associations, and athletic clubs will donate prizes. Sometimes individuals will donate a prize—this prize can be called the John Doe Cup. In some cases large department stores have offered prizes or merchandise certificates which they will redeem.

The medals awarded at the end of century runs are paid for by an extra charge paid by the successful competitor. The sponsor club may pay for the cost of the cup given to the club having most entries, or some such arrangement. As the cost of gold is practically prohibitive, most medals today are made of silver or bronze. The medal designed for cycling should be suggestive of the bicycle or bicycling, such as a bicycle, single wheel, rider on wheel, wheel and wing. The ribbon will bear the colors of the club or group that sponsored the event. Engraving on the back of the medal or on the cup may state event, date, and name of holder. The name of club or donor may also be stated on the award.

Sometimes championship certificates are given (as in the Olympic Games) by the governing cycling body. They are less costly and are not likely to be resold by the recipient as gold, silver, and bronze prizes often are, if the athlete is hard up in later years. Honorable mention should be given freely to those who come close to the place winners. A newspaper or magazine article is often cherished by the cyclist.

Everyone interested in the promotion of bicycling should aid in fostering century runs, parades, and carnivals, as these in turn greatly stimulate public interest.

Chapter XI

WHAT A CYCLIST SHOULD KNOW ABOUT THE LAW

A LEGAL maxim states "Ignorance of the law excuses no one." Therefore, every cyclist should know his legal obligations and rights on the highway.

The New York State Vehicle and Traffic Law effective October 1, 1937, states:

> Section 9-a. "Bicycle" shall include any vehicle consisting of an arrangement or combination of two wheels, one following the other, supported by a frame, propelled by the feet acting upon pedals.

Other states also have held a bicycle to be a vehicle. In *State* v. *Missouri Pacific Railroad Company*, 71 Mo. App. 385, it was decided that "In special connection as in construing particular statutes, a bicycle has been held to be a light vehicle or carriage." In an Alabama case, *Hill* v. *Reaves*, 224 Ala. 205, it was held that a bicycle was "a vehicle designed for speed and for use in the streets." In the Indiana case of *Mercer* v. *Corbin*, 20 N.E. 132, a bicycle was "a vehicle extensively used for convenience, recreation, pleasure and business." Again, in Alabama in *Davis* v. *Petrinovich*, 21 So. 344, it was stated that a bicycle was "a vehicle or carriage and to be included within such statutory terms as carriage." It was held to be distinguished from and not included in such terms as "apparatus" and "tool" (*Smith* v. *Horton*, 46 S.W. 401—Texas) and "wagon" (*Shadewald* v. *Phillips*, 75 N.W. 717 Minn.).

In regard to equipment, the New York State Vehicle and Traffic Law of 1937 prescribes:

> Section 79. EQUIPMENT:
>
> Every bicycle, operated or driven upon any public highway in this State, shall be provided with adequate brakes and steering mechanism in good working order and sufficient to control such vehicle at all times when the same is in use, and a suitable and adequate horn, bell, or other device, which shall produce a sound sufficiently loud to serve as a danger warning but which shall not be used other than as such warning nor be unnecessarily loud or harsh, and a front reflector and rear reflector, each of a type approved by the commissioner, to be applied and adjusted to the bicycle in such manner as to be visible for at least two hundred feet when opposed by a motor vehicle displaying lawful undimmed headlights at night on an unlighted highway. Every bicycle which is operated or driven on any public highway in this State during the period from one-half hour after sunset to one-half hour before sunrise shall display a lighted lamp on the front which shall be visible from a point five hundred feet ahead of such bicycle and which shall project either white or yellow light.

In brief, this law provides that cyclists in New York must have adequate brakes, steering mechanism, horn or bell, front and rear reflector, and a lighted lamp for night riding. Judicial decisions will determine the exact meaning of the words "adequate brakes" (whether one or two wheel, of the caliper, internal band, or coaster type). What a "sufficiently loud" bell is will also have to be determined in a case. The motor vehicle commissioner will no doubt list the approved bicycle reflectors.

The Traffic Regulations of New York City provide:

#49. Driver must have hand on steering device.

No person shall drive or ride a motor vehicle, motorcycle or bicycle without having a hand on the handle bars or steering device and no person shall drive or lead a horse without continuously having the reins in his hands.

#50. Clinging to moving vehicles.

No pedestrian or person riding upon any bicycle, motorcycle, coaster sled, roller skates, or any toy vehicle shall attach the same or himself to any street car or moving vehicle upon any roadway.

#51. Riding on handle bars prohibited.

No driver of a motorcycle or bicycle shall carry any other person thereon, except on a seat securely fastened to the machine in the rear of the driver and provided with foot rests and hand grips or in a side car attached to a motorcycle, nor practice any fancy or trick riding upon any roadway.

Tandem bicycles and side cars are permitted by these regulations.

The Oregon case of *Ellis* v. *Frazier* 63 P. 642 held that a "Bicycle Path is a highway for bicyclists and pedestrians." One who rides a bicycle is known as a "bicycler" according to the Pennsylvania decision in *Roberts* v. *Pennsylvania Railroad Company* 36 A. 403.

Although no law specifically states that the cyclist must obey traffic lights and police signals, that is understood to be the case. Vehicles must obey traffic laws and the bicycle is a vehicle. Safety demands that cyclists keep to the extreme right, riding single file in traffic, having the wheel under control at all times, giving the pedestrian the right of way, avoiding weaving in traffic, holding to a straight course, and giving proper signals when turning or stopping. Clubs should ride in columns, keeping to the right and giving faster vehicles an opportunity to pass when practicable.

In England left-hand driving is the rule, while on the Continent right-hand riding is the general rule, with few exceptions. In France, Germany, and Switzerland, where cycle paths are available, their use is compulsory.

An innkeeper is responsible for your bicycle but *only* if the wheel is delivered into his or his servant's hands on arrival. The usual first-class railroad ticket (regular, not excursion) allows you to ship your wheel on the train and is usually covered by the company's limited risk rate. Read your baggage check carefully as to the liability of the railroad company for damages to your bicycle. Bicycles need not be crated for shipment, but motorcycles must be. Always get a receipt for your wheel. You may insure your bicycle when going on a trip using trains or boats. The liability of a common carrier may be limited; therefore, note for what amount your bicycle has been insured by the railroad or boat company.

Regulations as to the amateur standing of a cyclist are embodied in the following statute:

AMATEUR: Article 53b Statute of Union Cycliste Internationale—An amateur may under no circumstances ride for monetary prizes. Amateurs are forbidden to compete against professionals unless the association to which they belong gives special permission and then only in connection with some patriotic or charitable movement or with the approval of the Board of the Union Cycliste Internationale at 24 Boulevard Poissonnière, Paris, France.

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Chapter XII

THE RULES OF SAFE RIDING

Statistics issued by one of America's leading insurance companies indicate that more than three times as many people were injured getting into or out of bed than the total of all bicycle accidents. Pedestrians struck by cyclists seldom suffer serious injuries. Property damage in bicycle accidents is negligible. An intoxicated person cannot mount a bicycle, but he can and does drive a car. If the 28,000,000 automobile drivers and the 7,000,000 bicyclists would obey the traffic regulations and observe the highway courtesy code, accidents would be materially reduced.

The National Safety Council, Inc. has listed sixteen rules for safe bicycle riding, which represent the best practices in the United States today. They are:

1. Never carry persons or bulky bundles on a bicycle. They invariably present too much interference with its control.
2. Never hang onto a moving vehicle. The slightest irregularities of pavement, variations in the speed of the vehicle to which you are clinging, lapses in your attention, or loss of balance will throw you

into the street. You are also in a fine position to be struck or squeezed by other vehicles.

3. Do not try to carry an object in one hand or to ride in the street "no handed." If parcels must be carried they should be put in the pockets, in a knapsack strapped or tied to the bicycle, or placed in a carrier. One-arm driving is as dangerous on a bicycle as in an automobile.
4. Ride without wabbling and avoid sharp turns. This will help motorists know what you expect to do. On hills, which are so steep that they cannot be ascended without weaving, dismount and walk.
5. In making left turns, do not cut the corner. The proper way is to follow the pedestrian crosswalk to the far right corner, thus crossing one line of traffic at a time rather than crossing diagonally in the middle of the intersection with traffic coming from all directions. Be sure to signal your intention to turn. Do it with your arm, but put your hand back on the handle bar before actually making the turn. Arm signals for left turns (and also for stops) are even more important for the cyclist than for the motorist, for the cyclist's turns are more abrupt and less likely to be anticipated by following drivers.
6. Keep close to the right on all pavements. It is much safer to ride close to the curb and let automobiles overtake on the left than it is to ride a bicycle in a line of moving automobiles. Keeping clear to the

right gives the driver of the car behind a chance to swerve out of the way in case you have a mishap.

7. When riding with others, stay in a compact group so that motorists will treat you with more respect; but never ride more than two abreast, and when meeting vehicles on narrow roads or when traffic is heavy, ride in single file.
8. At signalized intersections, stop behind automobiles. Trying to crowd ahead between the cars so as to be in front when the light changes may mean being run over by an automobile with a quick getaway. Always obey the signal.
9. Watch for and obey stop signs, especially at through streets. Walk the cycle across heavily traveled streets and all railroad grade crossings.
10. In overtaking slow-moving vehicles, pass carefully to the left to avoid being crowded to the curb if they are about to park.
11. Never ride the cycle from the roadway into a yard or driveway or from the yard or driveway into the road. It is dangerous for a pedestrian to dash into the street, but on a bicycle it is still more so. To swerve from the road across the sidewalk on a bicycle may mean a collision with a pedestrian. A bicycle should never be mounted except in the road or path; it should be led by hand from the house to the street. Riding off a curb or down steps is one of the most popular ways of being thrown into the roadway.

12. Pick your route carefully. Choose those with fewest automobiles. In business districts, where both pedestrians and automobiles are numerous, walk your cycle. On boulevards, where motor traffic is fast and heavy, and pedestrian traffic is light, it is safer to ride on the sidewalk.
13. Watch the pavement. Avoid riding in the flange groove of street car tracks, in ruts of unpaved roads and in steep gutters. Go slowly over muddy pavement or in loose sand. Never attempt to ride on icy or slippery streets.
14. If you want to do stunts on your bicycle, such as riding "no handed" or racing, do them in a field or yard, but not on the street.
15. Stand your bicycle up out of the way when not in use. Never let it lie on the ground.
16. Remember bicycling is strenuous exercise. Do not overdo it. To ride with an empty stomach, or after heavy eating or in the hot sun may result disastrously.

The Cycle Trades of America, Inc. writes:

A bicycle is a vehicle and the rules of safe riding are:

To obey all Traffic Regulations such as Red and Green lights, one way streets, stop signs and hand signals.

To ride in a straight line.

To have a white light on front and danger signal on rear for night riding.

To have satisfactory signaling device to warn of approach.
To give pedestrians the right-of-way.
To look out for cars at crossings and pulling out of parking places.
Not to hitch on vehicles.
Not to carry another person on your bicycle.
To keep your bicycle in good condition.
Always ride carefully.

The only "safe" place for a cyclist is on a cycle path. Pedestrians have a sidewalk and equestrians have a bridle path but the bicyclist must take his chances with the racing automobile. Few drivers are courteous enough or sporty enough to permit the cyclist a foot of the highway. A few cycle paths have been established in New York, Washington, and Atlantic City but they are inadequate to meet the needs of 7,000,000 cyclists in the United States today. There is a promise and a hope that some of the generous funds allotted to recreational activities will be granted for the establishment and maintenance of cycle paths.

Chapter XIII

FIRST AID FOR CYCLISTS

Accidents may never happen, but it is wise to be prepared for them. On a tour, at a race meet, or on a parade it is well for the leader or club captain to carry a small emergency first-aid kit. It costs about 50 cents and usually contains gauze, bandages, tincture of iodine, adhesive tape, aromatic spirits of ammonia, petroleum jelly, tweezers, and a sharp razor blade.

A beginner will occasionally tumble off the wheel with probably nothing more than a slight bruise or bent pedal. Bicycle riders do not have any more accidents than football players, motorcyclists, ice skaters, or polo players. It seems that the newspapers play up a cycling accident much more than an accident in any other sport. No reason can be ascribed for this fact.

You should have a knowledge of first aid for the same reason that you should know how to swim. Cycling accidents may result in bleeding, fractures and sprains, fainting, concussion, and sunstroke.

In the case of cut veins and arteries the following rules should be observed:

1. Determine whether a vein or an artery has been cut. (Bleeding from an artery issues in bright red spurts.)

2. If an artery is cut, tie a compress or tourniquet (a strong bandage made from handkerchief, belt, suspender, rope, or strip of clothing) around the wounded member, and between the wound and the heart. Hold the compress tight and keep it so until a physician arrives.
3. If a tourniquet is used, always place a flat stone or thin block of wood between the knot and the body to prevent the bruising of the skin and other blood vessels. Tighten with a stick, but do not apply more pressure than is needed to stop the bleeding.
4. If a vein is bleeding (the blood will be dark red or purplish, and will flow in a steady stream), place the compress over the cut.
5. Administer stimulants such as hot coffee or spirits of ammonia (one teaspoonful in a glass of water) if the patient shows signs of collapsing.
6. Where a compress or tourniquet cannot be applied, use thumb pressure to check the flow. (An Austrian soldier stopped bleeding from the great artery of the thigh for four hours by plugging the wound with his thumb; if he had let go for a minute, he would have bled to death.)

A fracture is a partial or complete break of a bone. Summon a physician and keep the patient in a comfortable position, the injured part resting on a pad, and keep him perfectly quiet. In the case of a compound fracture (where the bone protrudes), keep all objects away from it so that no infection can take place. Also take care that the flesh and skin shall not be cut by the sharp edges of the broken bone.

A sprain is a violent straining or twisting of the ligaments surrounding a joint. Keep pressure off the injured part. Before the swelling has commenced, immerse the injured member in cold running water. Then paint with iodine. A little later bind it with adhesive tape, cover with bandaging, and keep the part sufficiently active to prevent its getting stiff.

If someone has fainted do the following:

1. Take patient into fresh air.
2. Lay him down flat with *feet higher than head.*
3. Loosen tight clothing.
4. Spatter face and chest with cold water.
5. Hold smelling salts or ammonia near the nostrils.
6. Rub limbs toward the heart.
7. When consciousness has returned give hot coffee or spirits of ammonia or put patient to bed and apply heat.

Concussion is a violent shaking or jar which results in a dazed condition. It is only a temporary paralysis of the functions of the brain, and in most cases speedy recovery takes place. Make the party lie down with eyes closed and cover with coat or blanket. Keep the head cool. Keep the patient quiet and do *not* use stimulants.

Sunstroke is a sort of nervous breakdown caused by the sun's rays. The cyclist should always wear some sort of head covering. Sunstroke results in unconsciousness. Suggestions for recovery are:

1. Lay patient in a cool place.
2. Remove as much of the clothing as practicable.
3. Sponge scalp, face, and nape of neck with cold water.
4. Hold ammonia under the nose.
5. When patient becomes conscious, permit drinking of cold water (not iced) but no stimulants.
6. Avoid exertion and further exposure to the sun.

Here is a good general rule to follow when there is no arterial bleeding, and the patient remains unconscious: "Lying motionless until expert assistance has arrived has never yet injured anyone; but inexpert handling and being raised to a sitting or standing position has frequently caused grave harm to people with severe injuries." Summon a physician as quickly as possible, cover the patient, but do not administer any stimulants.

Chapter XIV

CYCLING AND CAMPING

Cycle camping is probably the most economical way of sightseeing and weekend touring. You can cover approximately three times as much ground as a hiker can in the same time. In England thousands of cycle campers enjoy the summer countryside. In America the ever-increasing costs of accommodations will no doubt stimulate this method of traveling.

In addition to selecting a scenic and easy route, you must consider: (*a*) the outfit; (*b*) carrying and packing; (*c*) the type of bicycle; (*d*) campsite.

To equip yourself with shelter, bedding, utensils, food, and other necessaries, in a pack so light and small that you can carry it on your wheel, is really a fine art. You cannot enjoy the weekend if your load makes pedaling hard work. Utility, lightness, and compactness is the test to apply when purchasing your outfit. You need a comfortable bed, shelter from rain, and security from insects. Choose your food from what can be cooked with the simplest and lightest utensils, give the most nourishment for its weight and bulk, and does not require more than a half hour for preparation. If two riders are going together, it means less weight for each to carry. Two in a bed requires less bedding. One set of cooking pots is sufficient for two.

The poncho or raincape is essential. An extra sweater or heavier jacket will give added protection during a cool night. Fresh dry underclothes are as warm as an extra blanket. Pajamas of pure silk are ideal, but not absolutely necessary. Personal items, such as soap, towels, comb, should be taken along. Shorts are comfortable for cycle camping if there are no mosquitoes in the areas.

Shelter is the next consideration. Rain is a cycle camper's worst enemy. The tent must be of waterproof material; balloon silk is ideal. The tent may be set up by folding poles that are a part of the equipment, or by making use of trees, or by cutting supports from saplings near the camping spot.

The sleeping bag is considered by many as the ideal form of bed. It should be waterproof, light in weight, soft, easy to roll up, and easily opened for a complete airing. Eiderdown is the lightest and warmest filling for the bag, but wool or kapok will usually give good service. A square yard or so of mosquito netting will ensure restful sleep in insect-infested country. If you do not have a sleeping bag, do not lie down on the cold hard earth but build yourself a bed of leaves, balsam, or hemlock. A good plan is to bring a large bag and stuff it with leaves.

The Boy Scouts have a satisfactory one-man cooking kit. If you wish to assemble your own outfit make sure it is light (aluminum), compact, and that the cutting utensils can be sharpened. Your complete outfit should contain at least a pan with lid, mug, plate, knife, fork, spoon, can opener, water bucket, small food tins. They should fit into and be tied in a small bag so that there will be no rattle.

Other essentials include a small electric flashlight, first-aid kit, map, notebook and pencil, waterproof matchbox, pocket knife, watch, bandanna handkerchief, sheath knife, small ax, strong twine, talcum powder, toilet paper, and magnifying glass. If you are a sportsman, take fishing rod and tackle, camera and film, or bird binoculars. For an overnight trip some of the above things may be eliminated. At any rate, remember the golden rule—"Go Light."

You can lighten your burden considerably by not carrying foodstuffs. But you will be then dependent upon town or inn for your meals. A good plan might be to cook your own breakfast and supper and eat your noonday meal in a restaurant. Thus you will lighten your pack and will not lose time cooking during the hot lunch hour. Meals are probably the most expensive item in the holiday camping tour.

The veteran camper Horace Kephart suggests the following for two days' rations for one person:

Bread, or prepared flour in waterproof bag	1 lb.
Cereal, in bag	8 oz.
Milk, powdered in bag (equals 1 quart)	4 oz.
Butter, in tin	4 oz.
Bacon, sliced and trimmed, in wax paper	12 oz.

Cheese, in waxed paper	4 oz.
Eggs, powdered in bag (equals 9 eggs)	3 oz.
Raisins, in bag	4 oz.
Dried apricots, prunes, or cranberries	4 oz.
Sugar, in bag	6 oz.
Chocolate, for eating, in waxed paper	4 oz.
Coffee, ground in bag	2 oz.
Tea, in bag	1 oz.
Salt, in bamboo tube	2 oz.
Total weight	4 lb. 10 oz.

J. Langdon and Sons of Duke Street, Liverpool, England, sell a complete cycle-camping outfit for about $21. It is planned for one person for cycling tours. It consists of the following:

"Featherweight" tent complete	2 lbs. 8 oz.
Ground sheet and pegs for same	15 oz.
"Comfy" sleeping bag (eiderdown)	1 lb. 4 oz.
Compact brush, comb, and mirror	2 oz.
Japanese rubbered air cushion	2 oz.
"Compleat" cooking outfit and stove	15 oz.
Aluminum knife, fork, and spoon	2 oz.
¼-pint aluminum flask and eggcup	3 oz.
Enameled cup, plate, and mop, per set	5 oz.
Canvas bucket and washbasin	6 oz.
Pole clips and candleholder	2 oz.
Total weight	7 lbs.

After your outfit has been assembled it must be packed and carried conveniently. Probably the best type of carrier is the metal frame attached to the rear axle over the rear wheel. Two panniers may be fastened by a strap over this strong rear carrier. Distribute the weight as evenly as possible, each pannier carrying about the same weight. Keep your equipment in the same place for ease in repacking and in finding things. The things that you will need immediately upon reaching the camp spot should be readily available. Poles may be tied to the frame of the cycle if they do not interfere with the pedaling. All carriers and packs should be made of waterproof material. Try to carry some of the weight on the front tire: a clothing roll may be strapped to the handle bar or placed in a front luggage carrier or basket. Avoid carrying anything heavy on your back. Redistribute your load en route if you notice a drag while riding on the level. Be sure that the luggage does not in any way hinder your pedaling or interfere with braking or steering. Don't allow any portion of your kit to hang loose, such as your frying pan. Everything must be firmly secured.

A touring-model, lightweight bicycle may be used for cycle-camping trips. If your weight is about 150 lbs. and the complete pack about 30 lbs., 1⅜- or 1½-inch tires are recommended. This tire also rides well on a dirt or gravel road with a bumpy, washboard surface. The tire should always be inflated to proper pressure, or the heavy load will damage it beyond repair.

It is advisable to have your wheel fitted with a changeable gear. One author recommends the 70-52-39 ratio for cycle camping. A coaster brake or hand brake is necessary for an emergency stop. Freewheeling is easy for the downgrades but requires constant use of brakes. If you generally ride a high gear, it might be well to change to a lower one for the camping trip with the overload. For cross-country riding, mudguards afford some protection from dirt and mud splashed up from your own wheel.

In selecting a campsite you may choose a national or state park overnight campsite or pitch your tent at any attractive spot along or away from the roadside. The National Park Service of the Department of the Interior will give you information as to campsites and facilities for campers in national parks. State park or conservation departments will cooperate in giving information about camping in areas under their jurisdiction. At these public sites a ranger is usually stationed to give the prospective camper information and assign a location.

Before you camp at an apparently uninhabited spot make inquiry as to the owner and obtain permission to enter on the land and camp there. The act of trespass is a violation of the property laws. All campers should be careful to put out their fires, not to remove plants and flowers, to clean their camp before leaving, and either bury or carry away nonburnable rubbish. Above all, drinking water should not be polluted. Permits are usually required for hunting and fishing. No records are to be made, for pleasure is the sole aim of cycle camping.

Chapter XV

THE EVOLUTION OF THE BICYCLE

It has been difficult to trace the origin of the bicycle. Some authors credit the Egyptians with having built the first foot-propelled machine; others state that the ruins of Pompeii contain frescoes depicting winged figures riding a stick supported by two wheels. (The author while in Pompeii was unable to locate these frescoes.)

Probably the first record of man propelling himself by mechanical means is evidenced by a stained-glass window in the church of Stoke Poges, four miles from Windsor, England. The window bears the date 1642. It shows a nude child astride a wheeled form of hobby horse, blowing a trumpet. This strange mortal or immortal figure was probably a creation of the artist's imagination.

The *Journal de Paris* of July 27, 1779, describes a new vehicle exhibited in Paris. M. Blanchard and M. Masurier had constructed a manumotive carriage. The new vehicle was exhibited before the court of Louis XVI and Marie Antoinette at Versailles. It has been claimed that this machine was copied from one invented by John Veverf, an English schoolmaster of

Surrey. This English carriage of 1766 had four wheels and was worked by a man standing in a sort of box at the rear. The vehicle was propelled by standing on lever planks, alternately depressing each lever. A rack and pinion sort of arrangement transmitted the power to the large pair of rear wheels. A Rochelle doctor, M. Ricard, attempted an improvement on the manumotive carriage. With a powerful servant these manumotives could travel about three miles an hour.

In 1816 M. Niepice of Châlons rode a contrivance called a "Célérifère" in the Luxembourg Gardens. This French Célérifère had two wooden wheels, a wooden frame and a steering rod. This appears to have been the first practical machine. It was known as a Celeripede in England.

Baron Karl von Drais of Mannheim, Germany, improved upon the Celeripede. A rest for the arms was added. With this machine the inventor was able to climb hills and cover more ground than had been previously possible. It was a sort of coaster, on which the rider sat astride and ran along the ground. There were no pedals. Steering was accomplished by means of a crude bar. It was called the Draisine. The French patent for this machine was granted February 17, 1818. Both Celeripede and Draisine were "hobbyhorses."

Dennis Johnson, a London coachmaker, patented the Pedestrian Curricle in 1818. He was responsible for making this hobbyhorse, or dandy horse, fashionable. There was no improvement over the earlier models, the rider still had to strike the ground with his toes. A special ironshod sole boot was produced to withstand the hard wear given by a rider of the dandy horse. These machines sold for from eight to ten guineas each. Special hobbyhorses were also made for women. Comic artists of the day ridiculed the sport and it soon died out.

William K. Clarkson was granted a United States patent for "an improvement in the velocipede" on June 26, 1819. It seems to have found favor in New York, Boston, and Philadelphia for a while.

Lewis Gompertz of Surrey, England, made a novel improvement in 1821. His contribution was to supplement the leg action by bringing the arms into play to drive the front wheel. The handle in front of the driver connected with a segment rack, gearing in a pinion on the front wheel, so that it could be driven by the hands. The plan was clumsy and little was heard of it.

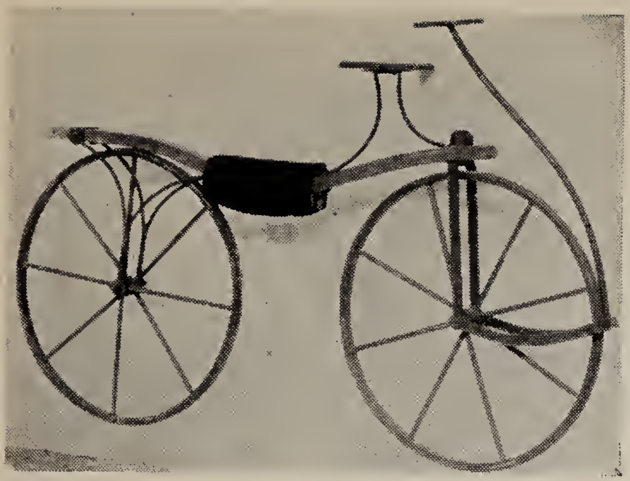
John Baynes in September, 1819, had attempted to keep the rider's feet off the ground and make them work a set of levers or treadles. His complicated arrangement proved too cumbersome to be practical. If this Leeds cutler had designed a simple direct crank action it might have been the most important invention of the century.

A 12-mile-an-hour speed was obtained by Gavin Dalzell of Lanarkshire, Scotland, about 1836. He solved the problem of balancing and propelling a bicycle without touching the ground with the feet. By a system of levers and rods running to the rear cranked axle, rear-wheel driving was accomplished. It was called a "Rear Driving Dwarf Safety Bicycle." This design was known to Continental inventors and no doubt used by them to perfect other machines.

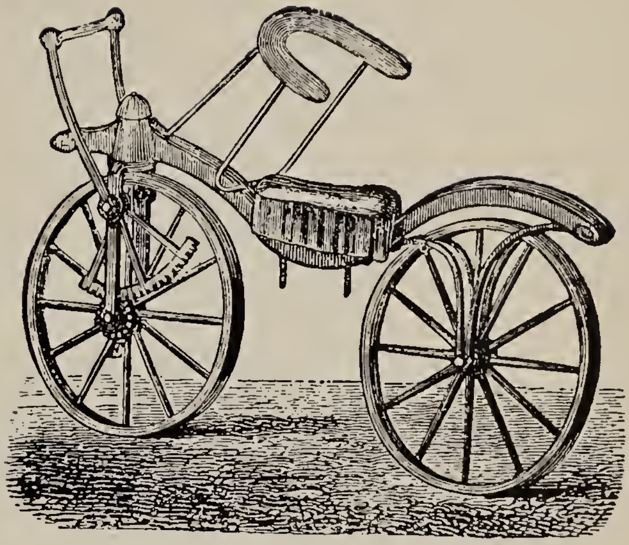
According to some historians Kirkpatrick Macmillan, of Dumfrieshire, Scotland invented and used the first treadle-propeller bicycle about 1839.

The velocipede was patented in France in September, 1865, by Woirin and Leconde. It had three wheels, one large front wheel and two smaller rear wheels on the same axle. The outstanding feature of this machine was its being propelled by cranks on the front wheel. This front wheel was both driving and guiding wheel; it had foot cranks with pedals. Also, the rider was brought over the wheel so as to gain the assistance of his weight.

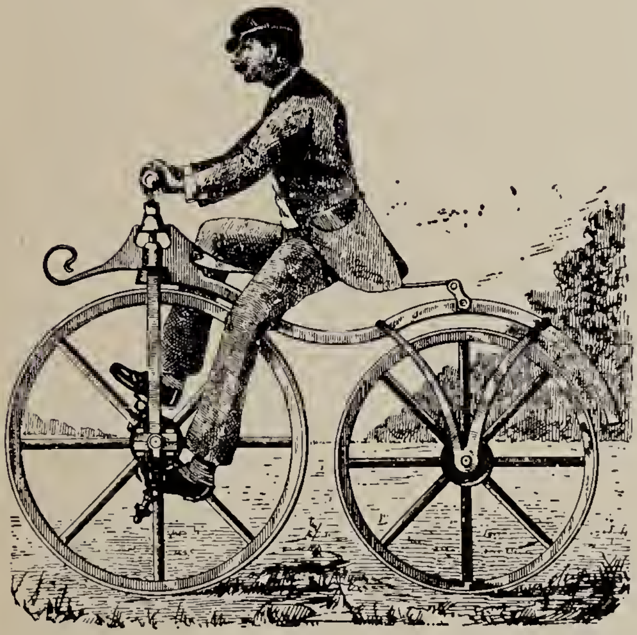
The next step was a two-wheeled velocipede. Pierre Lallement, a French mechanic, in 1865 made this first wooden bicycle and rode it. It was exhibited in the Paris Exhibition by his employer, M. Michaux. Lallement came to America and rode one of his two-wheeled velocipedes in New Haven. With one J. Carrol of New Haven, Lallement obtained the first patent in the United States on November 20, 1866. The vehicle consisted of two wooden wheels, with iron tires of nearly equal size, wooden frame with cranks on the front axles. This clumsy "boneshaker" was considered the pioneer bicycle by French writers. This early bicycle had cranks



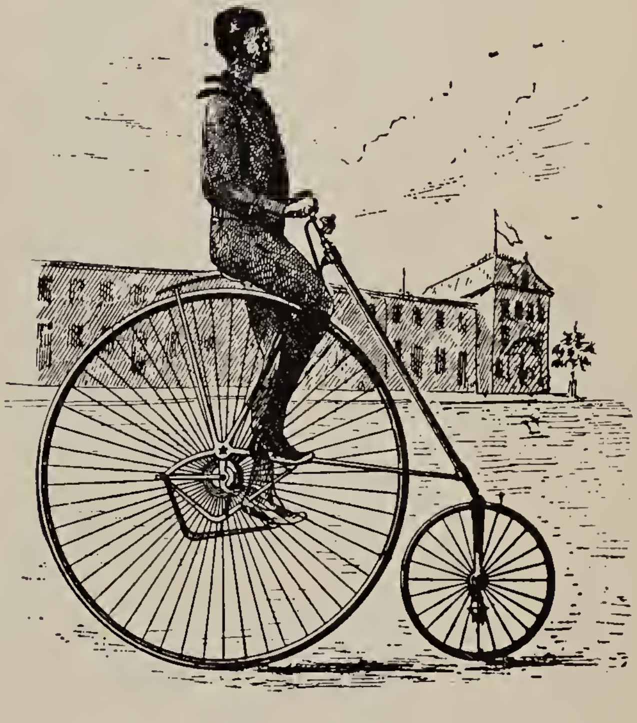
Pedestrian Curricle, Patented in England in 1818. Reproduction from Smithsonian Museum



Gompertz' Hobby Horse, 1821, Driven by the Hands or the Feet



Lallement Velocipede, 1866, the Forerunner of the Bicycle



American "Star" Bicycle Operated by Rack and Ratchet Pedal, 1883

fitted to the rear wheel, pedals, a comfortable seat and handle bars. It weighed about 57 pounds. Lallement then returned to France and became a bicycle manufacturer. Later he made parts of the machine of iron and bronze. To England goes the credit for having first patented a two-wheeled crank-action velocipede on August 1, 1866, by one Edward Gilman.

The use of a chain is another milestone in bicycle evolution. On May 18, 1866, the *English Mechanic* carried an illustration of a tricycle driven by means of cranks and independent endless chain. The June 22nd issue of the same magazine mentioned a new power gear using two sets of speeds. One set of gears was raised from the ground when the other was engaged. More and more parts of the cycle were being made of metal. The rim and spokes were made of steel. Some of these early boneshakers weighed as much as 115 lbs.

Riders now began to think of comfort awheel. One English rider describes how a belt of rubber was stretched over, cemented, and nailed to the rim. This was on November 7, 1868. By 1869 wood was practically abandoned for spokes and rim. Light wire spokes were looped through inside the iron rim and carried back to the hubs. One of the greatest problems of the cycle manufacturers was to lighten their product. A Frenchman, Jules Truffault, conceived the idea of a hollow frame, from the scabbard of a sword.

The war of 1870 between France and Prussia slowed up cycling progress in France. In 1872 Starley of Coventry, England, invented the Ariel bicycle. This had a high front wheel, over which the rider sat, and a small rear wheel. Other British manufacturers were bringing out similar machines, some being lighter, others higher. Famous names of the period were Coventry Machinists Company, Dan Rudge, Keen, Humber, Stanley Works, Starley and Birmingham Small Arms Company.

Tricycling came into favor about 1877 and continued to be the vogue for several years. In 1877 an Englishman named Otto conceived of riding on two large parallel wheels. The rider sat between the wheels, above and behind the axle. The first Otto was built with 72-inch wheels. Great skill was required in steering downhill. The Otto-type machine, or Dicycle, never became popular and died out in about ten years.

In 1885 J. K. Starley of Coventry built a bicycle with two wheels of same height. Direct steering was provided through a sloping fork. The machine was exhibited in London. Later it was a winner in a 100-mile race. It was called the "Rover" and was a success. This revolutionized cycle construction throughout the world. This new "Rover" or "Safety" made the old high-wheel bicycle obsolete. This new machine was easy to manage, faster, and more comfortable. It cost about $300 and weighed about 85 lbs.

The final major improvement was the invention of the pneumatic tire by James Boyd Dunlop, a veterinary surgeon of Belfast, Ireland, in 1889. Thus, an air belt was formed around the wheel, abolishing vibration. The word "boneshaker" was eliminated from the vocabulary of the cyclist. Before the application of the pneumatic tire, various devices were employed to soften the ride, such as spring forks, frames, and saddles. Both single- and double-tube tires are used today.

The United States became bicycle conscious during the nineties. In 1877 the Boston firm of Cunningham, Heath and Company imported and sold the best English makes of bicycles. They also established a riding school in connection with their business. The first American manufacturer was Colonel Albert A. Pope of Boston. He visited London and Coventry and studied the construction of the bicycle. He brought back samples of English wheels. About 1878, Pope bought a sewing-machine factory at Hartford and turned it into a bicycle factory known as the Pope Manufacturing Company. The famous "Columbia" was turned out in this pioneer factory. The ball bearing and coaster brake were also added. Improvements were rapid. The weight was reduced to 25 lbs. But the bicycles still cost from $75 to $125.

Between 1890 and 1900 the "cycling craze" had become the national sport of America. Three hundred and twelve factories were operating night and day to fill orders from all parts of the country. More than 1,200,000 bicycles were manufactured in 1900. The year 1899 marks the peak of cycling. Between 1900 and 1905 more than three-fifths of the manufacturers went out of business. The revival of bicycling caused the sale of more than a million wheels in 1937. In spite of the intense competition by motor transportation the bicycle is staging a strong comeback.

The last four decades have seen further improvements for cycling. In 1900 Henry Sturmey of Nottingham, England, invented a three-speed internal gear shifting. This is a great aid for mountainous cross-country riding. Caliper brakes, that are light and practicable, were first used in the 1903 Tour de France. About 1920, the Derailleur, external gear shift, was marketed. This was a lighter weight gear for racing wheels. The weight of bicycles was reduced about 30 per cent by the use of duralumin in 1930. A road racing wheel now weighs from 19 to 22 lbs. In 1937 a manufacturer produced a folding bicycle. By means of lock nuts the frame may be "broken in half" and placed into the luggage carrier of an automobile, or carried into the subway or streetcar. It may be reassembled in a few minutes without touching the chain, wheels, handle bars. A third wheel, or "motor-wheel," was added to the rear bicycle wheel, but it proved unpopular.

Lightness and compactness seem to be the present trend of bicycle evolution.

Appendix I

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Appendix II

FORMULA AND GEAR TABLES FOR BICYCLES

To find the gear of your machine, count the number of teeth on the rear sprocket; divide this number into the diameter of the wheel. Then count the number of teeth on the front sprocket and multiply. The answer gives the gear.

EXAMPLE: Your bicycle has a 28-inch wheel (diameter) usually. Count teeth on rear sprocket, you find seven. Count teeth on front sprocket, you find sixteen. Use this formula:

$$\frac{D}{T} \times A = G$$

D equals the diameter of the rear wheel
T equals the number of teeth on rear-wheel sprocket
A equals the number of teeth on front sprocket
G equals the resulting gearing

$$\frac{28}{7} \times 16 = 64$$

$$\frac{\text{Diameter of Rear Wheel}}{\text{Teeth on Rear Sprocket}} \times \text{Teeth on Front Sprocket} = \text{Gear}$$

The following table will show the gear of any bicycle. You need but count the number of teeth on the front and rear sprocket wheels and measure the diameter of your large bicycle wheels. This table checks with the formula given above. Fractions have been omitted.

GEAR TABLE

Teeth on Chain or Sprocket Wheels		The gear when the diameter of the rear driving wheel is:			
Front Crank Sprocket	Rear Hub Sprocket	24	26	28	30
16	6	64	69	74	80
16	7	54	59	64	68
16	8	48	52	56	60
16	9	42	46	49	53
16	10	38	41	44	48
17	6	68	73	79	85
17	7	58	63	68	72
17	8	51	55	59	63
17	9	45	49	52	56
17	10	40	44	47	51
18	6	72	78	84	90
18	7	61	66	72	77
18	8	54	58	63	67
18	9	48	52	56	60
18	10	43	46	50	54
19	6	76	82	88	95
19	7	65	70	76	81
19	8	57	61	66	71
19	9	50	54	59	63
19	10	45	49	53	57

Appendix III

PARTIAL LIST OF BICYCLE CLUBS IN THE UNITED STATES*

California (11)

- La Jolla—La Jolla C. C.
- Long Beach—Crebs Cycle
- Inglewood—Twentieth Century Wheelmen
- Los Angeles—Florence Amateur C. C.
- Los Angeles—Italian Cycling Club
- Oakland—East Bay Wheelmen
- San Francisco—California Bicycle Association
- San Francisco—California Cyclist Association
- San Francisco—Golden Gate Wheelmen
- San Francisco—New Century Wheelmen
- San Jose—Garden City Wheelmen

Colorado (1)

- Denver—Denver Wheel Club

Connecticut (1)

- Hartford—Le Chemineau Cycle Club

Illinois (8)

- Chicago—Catholic Youth Organization Cycle Club
- Chicago—Danish-American C. C.
- Chicago—Edison Park Wheelmen
- Chicago—Henry Playground Wheelmen

* This roster was taken from the Amateur Bicycle League of America questionnaire of November 1, 1938.

ILLINOIS (8)—(*Continued*)

Chicago—Italian American C. C.
Chicago—Mazzini Cycle
Chicago—South Chicago Wheelmen
Chicago—Southtown S. C.

INDIANA (3)

Indianapolis—Edgewood Wheelmen
Indianapolis—South Side Cycle
Indianapolis—The Irvington Cycle Club

MAINE (1)

South Portland—Pioneer Wheelmen

MARYLAND (1)

Baltimore—Century Road Club

MASSACHUSETTS (10)

Boston—Norfolk County Wheelmen
Brockton—Brockton Bicycle Club
Cambridge—Boston Wheelmen
Franklin—Franklin Cycling Club
Holyoke—Western Massachusetts Cycle Association
New Bedford—New Bedford Wheelmen
New Bedford—Perry Bicycle Club
Quincy—North Quincy C. C.
West Roxbury—West Roxbury Cycle Club
Worcester—Worcester Cycle Club

MICHIGAN (3)

Detroit—East Side Wheelmen
Detroit—Sunset Riders C. C.
Detroit—Wolverine Wheelmen

MINNESOTA (1)

Minneapolis—Gopher Wheelmen

Missouri (1)

St. Louis—St. Louis Cycling Club

New Jersey (5)

Belleville—Belleville Bicycle Club
Newark—Alpine Wheelmen
Paterson—Triangle Cycle Club
Plainfield—Plainfield Wheelmen
Union City—North Hudson Wheelmen

New York (17)

Buffalo—Buffalo Cycling Club
Buffalo—East Side Sporting
New York—Acme Wheelmen
New York—Century Road Club Association
New York—College Cycle Club
New York—Columbus Cycle Club
New York—Brooklyn-Empire City Wheelmen
New York—French Sporting Club
New York—German Bicycle Sport Club
New York—Gotham Cyclists
New York—Hollis Bicycle Club
New York—Jamaica-Long Island Wheelmen's Association, Inc.
New York—Elmhurst-Newtown Wheelmen
New York—Astoria-Tri Boro Wheelmen
New York—Unione Sportiva Italiana
New York—Ladies Auxiliary Gotham Cyclists
Tonawanda—Eldredge Bicycle Club

Ohio (4)

Cleveland—Cleveland Cycle
Columbus—Central Ohio Wheelmen
Columbus—Franklin Bicycle Club
Shelby—Shelby Wheelmen

OKLAHOMA (1)

Oklahoma City—Oklahoma C. C.

OREGON (3)

Portland—Columbia Empire Wheelmen
Portland—Indian Northwest
Portland—Sprocketeers Club

PENNSYLVANIA (4)

Laureldale—Keystone Wheelmen
Philadelphia—Philadelphia Bicycle Club
Philadelphia—20th Century Cycling Club
Philadelphia—Unione Sportiva Italiana

RHODE ISLAND (1)

Woonsocket—Blackstone Valley Wheelmen

TEXAS (1)

Dallas—Dallas Cycle Club

WISCONSIN (5)

Milwaukee—German American Wheelmen
Milwaukee—Horn Wheelmen
Milwaukee—North Side Cycle Club
Racine—Racine Wheelmen
West Allis—West Allis C. C.

INDEX

Acetylene lamp, 22
Adjustments, 22, 32, 43
Amateur Bicycle League of America, 65
American Youth Hostels, 68
Ankling or ankle action, 22

Back pedaling, 22
Ball bearings, 22, 33
Belgium, tours in, 95
Bells, 14
Bibliography, 151
Bicycle, adjustment, 32, 43
  choice of, 1
  clubs, 56
  diagram of, 26
  learning to ride, 49
  parts of, 22, 26
  repairs, 38
  types of, 1
Boneshaker, 149
Brakes, coaster, 7
  hub, 7
  rim, 35
Bumpers, 15

Camping, 137
Capes, rain, 46
Care of cycle, 41
Carnivals, 111
Carriers, luggage, 13
Century Road Club Association, 57
Century runs, 23
Chains, adjustment, 34, 36
  care, 36, 40
  choice, 15
  lubrication, 36
  pitch, 23
Choosing a bicycle, 1
Clothing, 44
Clubs, how to organize, 56
  directory of, 157
College Cycle Club, 58
Cotter pins, 23
Cranks, 23
Cycle, paths, 74
  steamers, 75
  tours, 77, 85
  Trades of America, Inc., 66
  trains, 75
Cycling, terms, 22
Cyclists' Touring Club, 63
Cyclometers, 12, 20

Dead-heat, 24
Denmark, tour of, 98
Derailleur gear, 150
Diamond Frame, 24
Diet, training, 101
Dynamo lamp, 24

Electric lamps, 24
England, tours in, 89
Equipment for tour, 71
European cycle tours, 85

First aid, 133
Fixed wheel, 24
Forks, 24
Frame, how to find height, 3
  types of, 2
France, tours in, 91
Free wheel, 24

Gear, 24
  case, 25
  tables, 25, 155
  to calculate, 155
  variable, 8

INDEX

Generators, 24
Germany, tours in, 95

Handicap, 25
Handlebars, 6, 25
Hanger, 25
Head, steering, 25
History of the wheel, 143
Home trainer, 105
Horn, 14
Hubs, 25

Innkeeper and care of cycle, 126
Insurance, 126
Irish Free State, tours in, 91
Italy, tours in, 97

Lamps, 12, 20, 27
Law for the cyclist, 123
League of American Wheelmen, 64
Learning to ride, 49
Lubrication, 27, 36, 43
Luggage, carrying, 13, 140

Match race, 27
Measurement for bicycle, 3
Men's clothing, 44, 48
Mile-a-minute Murphy, 107
Mirrors, 15
Miss and out race, 27
Mud guards, 20, 27

National Cyclists' Association, 65
National Cyclists' Union, 63
National Safety Council, Inc., 128
Netherlands, tour of, 95
Nipples, 27

Offset, 27
Oil bath gear cases, 25
Oiling, 27, 43
Open race, 27
Outline cycle tours, 67

Pacing, 27
Pannier bags, 13, 140
Parades, 117
Pedals, 11, 28
Pickwick Bicycle Club, 62
Police regulations, 123
Position on wheel, 49
Pump, 12, 28
Punctures, 38
Pursuit race, 28

Races and racing, 99
Rake, 28
Rear light, 15
Reflectors, 15
Repair of wheel, 32
Rims, 16, 28
Road racing, how organized, 107
Road rules, 128
Roller racing, 105

Saddle, 28
  care of, 37
Saddles, choice of, 6, 8
Safety rules, 128
Scotland, tours in, 91
Scratch, 28
Second hand bicycles, 1
Shoes, 29, 45
Signals for road riding, 129
Siren, 14
Spanners, 29
Spokes, 29, 35
Sprinting, 29
Sprocket, 29
Stand, 13
Stays, 29
Storage, 37

Tandem, 29
Tents, 138
Three speed hubs, 9
Tire repairs, 38
Tires, 6, 29, 34
Toe clips, 21, 29

INDEX

Tool kit, 16
Touring, abroad, 85
  costs, 73
  dress, 44
  equipment, 72
  planning, 67
Traffic regulations, 128
Trail, 30
Training, 99
Tread, 30
Triplet, 30
Tubing, 30

Unicycle, 30

Valve, 30
Variable gears, 9
Velocar, 30

Waterproof clothing, 46
Wheel base, 30
  guard, 11
  size, 31
Where to ride, 67
Women's clothing, 44, 48

Youth hostels, 68

Zimmerman, A. A., 107